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welcome

With this month's cover feature, we're showing you how to emulate the old-school music studio using your thoroughly new-school computer. We're aided in this endeavour by the fact that the fundamental principles of electronic music technology haven't really changed in the years since they were established. The vast majority of soft synths and samplers still adhere to the same subtractive design as their hardware forebears; compressors and EQs still operate on the same basic architecture that they always have; MIDI is still ubiquitous; step sequencers are still, well, step-based... You get the point.

What has changed, however, is the sheer scale of these instruments and effects, and the fact that we can now bring together as many of them as we like in an absurdly flexible, powerful and high-fidelity virtual studio that takes up no more space than a laptop computer. All of this, of course, has a profound effect on the sound of the music we make.

Our *Vintage Sounds* tutorial, then, is as much about imposing limitations as specifically emulating old gear. Deliberately restricting the endless options provided by our DAWs can, ironically, be creatively liberating, as well as a powerful reminder of just how fabulously spoilt the 21st Century computer musician is.

ENJOY THE ISSUE...

Ronan Macdonald **Editor**



The cm Mission Our goal is to help you create great music with your PC or Mac. With that objective always in mind, we bring you step-by-step tutorials on all aspects of software-based music production, unbiased reviews of the latest products, technical Q&As, and a Dual Layer DVD-ROM packed with exclusive software and samples.

SUBSCRIBE AND SAVE! SEE P19



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If you're a rookie, check out the **CM Beginners** folder on the DVD - a library of material put together to help you get your head around many basic computer music concepts

cm/inbox

Sound off and make your opinions heard - email cminbox@futurenet.co.uk



Message of the month

Serve and protect

I've finally made the big hardware upgrade I'd been striving for - a great, big multiprocessor behemoth of a PC - and I followed one piece of advice which is leaving me a bit in the cold. The PC has been isolated from the outside world via a purposeful lack of network, internet or connection to any other computer, to ensure that it will never be infected by a virus, never be hacked and I won't waste my precious studio time searching websites for random garbage/emails.

Whatever happened to the days when

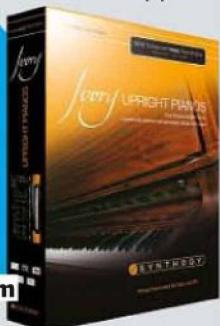
freeware, shareware and donationware, which had no expiry date, could be installed without an internet connection? I remember when I installed and registered a copy of GoldWave years ago by printing the registration form, mailing

it to the author in Canada and receiving a printed activation code by mail.

I have other PCs for email and whatnot, but most of the required registrations have to be done through the same computer. This has even been an issue with some - not all, of course - of the **cm** DVD goodies of the past (daHornet, to name one). Will there be a day when software manufacturers - especially those geared towards studio electronics - might return to printed forms or, maybe, the ability to transfer all the necessary data with a USB key?

Jon Spurgeon, Minneapolis, USA

The writer of our *Message of the month* will receive a copy of **Synthogy Ivory Upright Pianos** for Mac and PC, worth £190, courtesy of **Synthogy** and www.turbospacesound.com



Total coverage

Being a long time reader (all of three years), I was very happy to hear Ronan saying in issue 143's *Inbox* that **cm** would not be turning its back on drum 'n' bass any time soon.

This is very welcome news to myself and, I'm sure, many other dedicated drum 'n' bass producers. I have to agree that issue 142's DnB coverage was by far the most in-depth and detailed piece ever put together - from top producers in video to amazing samples, right through to the great articles!

One thing I've always found with **cm** is the detail of the tips and tutorials. What other mags would simply say in a sentence or paragraph, **cm** explains in full.

I learned a lot of the tricks of my trade from **cm**, for which I

am and will always be grateful; but like any producer, most of my knowledge was self-taught through trial and error, as this was the best way to be creative and buck the trends.

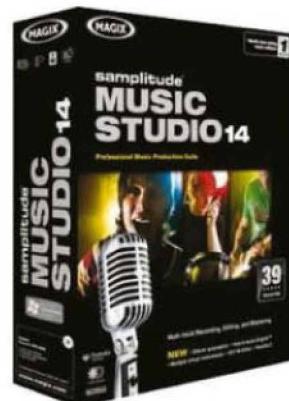
However, I will always be a devoted **cm** buyer due to the wonderful, detailed articles. Keep up the amazing work, and thank you for years of great reading and advice!

Darren Winters, Address not supplied

Our pleasure, and glad to hear you're sticking with us - you can never know too much, after all! RM

In the beginning

Firstly, many thanks for a great



Magix Music Studio: A great entry point into computer music

magazine, which I have just subscribed to.

About three months ago I decided I wanted to create some music again after a 25-year

break! In the early 80s, I created tracks using a little Fostex X-15 4-track, Korg MS-10 mono synth, Korg Poly 800 and Boss DR Rhythm DR-55 drum machine.

I had no idea how to start and what software to use. Eventually I bought Magix Music Studio with a loop/sample DVD to create some tracks, and recently I purchased Sonar Home Studio 7 XL. I have now published some tracks on MySpace and SoundCloud.

Only when I started buying your magazine did I realise how vast the digital audio workstation market is! I now realise that the big players are products such as Reason, Live and Logic Pro.

So my main point is that I think it would be useful if occasionally there were sections



The Atari ST: famous for its rock-solid MIDI timing and stability

in **cm** for the absolute beginner like myself, or a sub-publication (as you sometimes do for the big DAWs). I think the DVD beginner's section is great as well.

Martin Eve, Brecon, Wales

We have actually published a few Beginner's Specials over the years, and the latest one might still be available from our back issues department - see p113.

Beyond that, it would be impossible to give the absolute beginner everything they need in every single issue without it becoming rather repetitive for everyone else. However, I can confidently say that you won't find any other music technology magazine that makes this stuff as accessible as **cm does. RM**

The outlook is bleak

I've just read Adam Pendlebury's letter (cm143) concerning the learning curve of technology sapping his creative time. I must concur with his sentiment and take exception with your reply!

"Only when I started buying your magazine did I realise how vast the DAW market is!"

I've been MIDI-ing since 1988, when I was promoting the Fairlight CMI III to the industry. On one occasion, I arranged an interview with Air Studios on their take-up of two Fairlights (at £33,000 each!), only to be told on arrival that they were just too complex and they were using a

then-new Atari 520ST and Steinberg Pro 24 instead!

I was off straight away to embrace this setup at home. I stuck with Pro 24 for years, even through the advent of Cubase for the ST, then the first sensible PC variant: VST 5. Only now am I coming back to re-evaluate the modern DAW option, having recently added new workstation hardware that the Atari/Pro 24 setup struggles with.

But my God, I too find all the manual reading, forum searching, Googling and hours of empty head time infuriating - so much so, that I've turned back to my guitars for an easier and more direct hands-on music making hit!

So, my advice (for what it's worth) is that no, it never gets easier! But what's essential is concentrating on a simple setup that allows your creativity to flow without hindrance or distraction, and only when you need a function that is missing, see if a solution exists and bolt it on, or work outside your system and import. It's fatal to try to get a handle on everything and chase false shadows - you'll never win!

You can, however, hear how good 1988 technology can still sound from a few clips on my YouTube page. Here's just one: tinyurl.com/qah8hp.

Mark Gardiner, Farnham

Nice clip - you're going to love this month's cover feature!

I agree that keeping one's setup as simple as possible is a good idea, but I also maintain that negotiating the music software maze does get easier with experience, a realistic level of expectation and a conscious effort to keep the most important thing - the music itself - to the fore. RM

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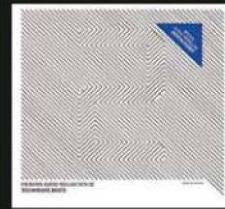
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**FatLoud
Urban Orchestra**

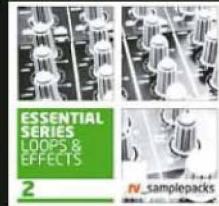
Organic urban orchestral loops, plucked pizz., string sections and more in the latest from FatLoud, featuring 100 loops and 30 vinyl-infused one-shot chords / hits. Pure inspiration. £27.90



**Sample Magic
Sunrise Sessions**

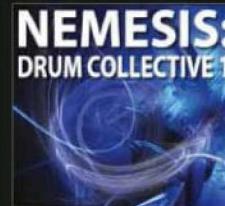
10/10 CM REVIEW

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cm/news

NEW RELEASES > COMMENT > INDUSTRY HAPPENINGS

Digital Performer 7

MOTU release the latest version of their professional DAW, including new plug-ins for guitarists

> MOTU's flagship application has been digitally performing for almost two decades now - its lineage can even be traced back to the mid-80s if you include its initial incarnation as Performer. But while DP has traditionally been held up as the DAW of choice for score composers, the all-new version 7 has guitarists in its sights, too, the biggest new feature being a suite of brand new processors aimed specifically at axe-slingers.

The Custom '59 plug-in is an amp simulator modelled on three iconic real-world amplifiers: the Fender Bassman, the Marshall JTM45 and the Marshall JCM800. You can also interchange the tone stacks, preamp circuits and preamp tubes of each of the three designs to create a hybrid amp for custom guitar sounds. In addition, there are nine new stompbox effects, based on famous Boss, Electro-Harmonix, Ibanez and MXR pedals, which produce tones that MOTU reckon are "identical to - and indistinguishable from - the real thing".

Complementing all of that is the new Live Room I G cabinet/mic modeller, which has five cabs in total, including the 4x12 Modern for "ultra-distorted chunks and sludge" and 4x12 Vintage for "80s hair-band tributes and 70s proto-metal". There are also four mic channels (two mono, one stereo) that can be mixed together, each of which has three-band EQ, predelay, solo/mute and volume settings, plus sidechain outputs. The



There are many new toys in Digital Performer 7, but the headline is the collection of guitar plug-ins

two virtual mono Omni mics can be placed in five positions - On/Off axis, Near, Rear and Far - while the stereo mics are limited to a Far setting but provide four configurations: XY, ORTF, Blumlein and Wide Omni.

Other notable improvements to the DAW include a customisable Channel Strip; in-line EQ and dynamics (graphic EQ and VU compression meters and basic controls built right into the Mixing Board); the ability to

place lyrics and transposable chord symbols alongside your tracks; better QuickScribe notation workflow; Pro Tools 8 support (DP can be used as a front-end for Pro Tools HD systems); and real-time crossfading.

MOTU's Mac-only Digital Performer 7 is out now, priced £449. For those upgrading from any previous version, it's £137.

www.motu.com

Return of the Mackie

Mackie unveil new Onyx-i Series mixers/interfaces

> Mackie have released a new range of analogue mixers, all offering up to 24-bit/96kHz quality over FireWire.

There are four units, from the compact eight-in/two-out Onyx 820i right through to the 16-in/four-bus/16-out 1640i. The mixers are largely based on Mackie's previous Onyx range, but what's really intriguing about is that they ship with the Mackie Universal

Driver v1.0 that enables the mixers to be used as Pro Tools interfaces - something that previously only Digidesign-approved hardware could do.

Mackie's Onyx-i series is out now for Mac and PC, comprising the 820i (£520), 1220i (£699), 1620i (£949) and 1640i (£1649).

www.mackie.com



This 16-channel/four-bus FireWire mixer, the Onyx 1640i, is the big brother of the new Mackie Onyx-i series

iZotope's new Alloys

New channel strip from the makers of Ozone

Alloy looks like being the mixing equivalent of iZotope's extremely tasty Ozone 4 mastering plug-in



> iZotope, the developers of the Ozone 4 mastering plug-in suite that received a 10/10 score in cm138, have released a six-stage channel strip processor called Alloy, which features easy-to-use macro controls to help simplify mixing.

The first of the sextet of mixing tools in Alloy is Equalizer, an eight-band EQ that emulates analogue units by applying soft saturation when pushed hard, with a variety of modes and a solo option for each band. The next module, Exciter, uses Harmonic Scaling technology to apply analogue-style colouring (with a multiband option) and enables the user to blend between saturation styles including tube, tape and transistor with an XY pad. The Transient Shaper is for adjusting the attack and sustain portions of a signal and also features a multiband mode for shaping specific frequency ranges.

Dynamics contains two sidechainable compressors (for the application of parallel processing), an Expander/Gate and a novel 'crosschaining' feature that enables one band to work as the key signal for another. Next up is the De-Esser, for attenuating

sibilance (with a multiband option for zeroing in on the problem area). Finally, there's a Limiter with Brickwall and Soft modes, as well as Phase Tools for phase inversion tasks and a zero-latency phase rotation control, which can be used to improve waveform symmetry in order to boost key instruments in the mix. The entire plug-in can run in zero-latency mode, which will be useful for real-time monitoring or live use, not to mention DAWs such as Pro Tools LE that don't have automatic delay compensation.

Alloy also features 150-plus MacroPresets, which are "designed to give you the perfect starting point for a broad range of mixing tasks". These presets combine the most important sliders and meters that iZotope deem essential to each task (eg, drum bus processing) on a single screen. You can also create customised MacroPresets for easy recall of your favourite processing chains.

iZotope's Alloy for Mac and PC is out now, priced \$249.

www.izotope.com

Steinberg take control

All-new Cubase-friendly CI2 interface/controller

> Steinberg have released CI2, a small USB interface and controller hybrid.

The unit offers two XLR combo jack inputs (with phantom power), a high-Z input, stereo 1/4" outs, headphones and a footswitch socket. Steinberg's ace in the hole, though, is the AI Knob, which can take control of whichever parameter the mouse pointer is hovering over, as well as scroll through the many files/project templates in the included Cubase AI5 software.

CI2 is out now for Mac/PC, priced £191.

www.steinberg.net



The compact CI2 interface/controller from Steinberg with its "next-generation" AI Knob

Mixdown



Our Deputy Editor dreams of stuffing his face at an all-you-can-eat musical buffet

> So the iTunes LP is upon us, and MXP4 format seems to be gaining a little ground too. But is this what people want? Clearly, it appeals to some, but I reckon that most people aren't so bothered about multimedia extras and just want to get their hands on music - and lots of it.

"Buying individual songs and albums seems outdated and a hangover from the days of CDs"

That's the thing with the internet: many of today's listeners have developed the kind of voracious musical appetite that wasn't previously possible to sustain, thanks to the proliferation of (mostly illegal) downloads. Buying individual songs and albums seems outdated and a hangover from the days of CDs and LPs (when they were your only real option for getting hold of music - aside from tape copying, which had its own drawbacks).

Before you get the wrong idea, though, I'm certainly not advocating the idea that 'music should be free'. What I would love to see is an all-encompassing music download subscription service with a huge range of quality, DRM-free content to be delivered quickly and easily - pay a regular fee and download all you like! Similar to how we pay a TV licence fee to the BBC, music would be a service rather than a commodity.

iTunes would be the logical channel to offer a serious subscription service and they could presumably use the 'number of plays' data from the iTunes app to fairly divide cash amongst artists, ie, those who get the most play-time get the most cash (of course, you could argue that this method has its own flaws). And they could still individually sell iTunes LPs, lossless versions, and so on, for those who want a little something extra.

I reckon that such a service would be enough to pull many away from the torrent sites, and ISPs could come down heavily on those who persist in illegally downloading, threatening them with disconnection and a hefty fine unless they cough up for a subscription.

I've no idea if there would really be enough cash generated by such a scheme to support the music industry, and I'm sure there are plenty of potential pitfalls that I haven't considered. Even so, I wish some company would just give it a go so we can find out if this is 'the solution'.



D16 Group's Shioitor is similar to Roland's famous SH-101 analogue synth in both look and sound

D16's nod to the past

Shioitor synth takes the Roland SH-101 and runs with it

> D16 Group, the developers that brought you Roland-inspired software in the shapes of Phoscyon, Nepheton and Drumazon, are at it again with a new synth called Shioitor. D16 say that it can perfectly emulate Roland's classic SH-101 analogue monosynth, and so Shioitor offers features such as twin oscillators (pulse and sawtooth), a sub-oscillator and noise generator. However, it goes way beyond the original - for starters, whereas Roland's hardware had a single filter and LFO, Shioitor has two of each, and D16 have added a chorus effect, too.

Shioitor isn't limited to just monophonic operation either, thankfully. It offers a layered architecture, with up to 16-note polyphony for each of its eight layers. These can be used to create huge sounds, and you

can divide the layers according to MIDI channel or key zone, as well as route each one to a different audio output. Every layer has an independent arpeggiator and there's a unison mode, too, which offers controls for spreading out the tuning, panning and filter cutoff frequency of the stacked notes. Shioitor's preset management system enables users to save entire setups or individual layer.

For hands-on tweaking, there's the Flexible Modulation Matrix. With this, you can tie your MIDI controller's knobs and faders to any of Shioitor's parameters.

D16 Group's Shioitor will be available for Mac and PC, although the release date and price have yet to be confirmed.

www.d16.pl

cm Special

> If you regularly find yourself trawling through the preset banks of your favourite synths rather than programming the sound in your head from scratch, then be sure to check out the latest cm Special.

The magazine is rammed with everything from easy-to-follow tutorials on the basics of synthesis to in-depth guides on customising presets and designing unique patches.

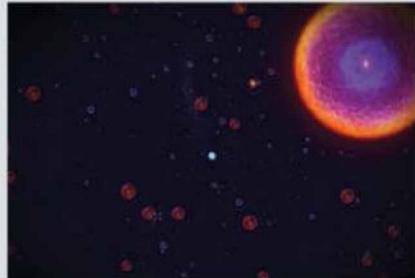
The included disc comes stuffed full of software to get you up and running, as well as ten exclusive video tutorials on creating the most cutting-edge synth sounds.

cm Special 38: Make Synth Music is now available in stores and online.

www.myfavouritemagazines.co.uk



Downsampled



On the merging of two different disciplines: music-making and gaming

> It can be argued that music-making and videogaming are converging. Just listen to the music in the game *Osmos*, which casts you in the role of a particle floating through space, absorbing other particles and flinging yourself amongst gravity wells. It's so musically complete that it could be thought of as an interactive ambient album.

As *Osmos* co-creator Mat Jarvis explains of his musical involvement, "It almost seems as though *Osmos* creates a world for the music to exist - a new world that's both microscopic and macroscopic."

The music by Loscil, Gas/High Skies, Julien Neto and Biosphere is focused on the dilation of time. In fact, the ambient listening experience transforms play and vice versa, with the sounds pitching higher and lower as the action speeds up and slows down.

"With the prospect of greater interaction between music and games, 'playing music' could take on further meaning"

While titles like *Osmos* are working to bridge the gap between game design and musical composition, coming from the angle of the former, so tech-savvy computer musicians are essentially working in the opposite direction, using musical/visual tools and techniques that were originally developed for games or applying gaming to musical tools. For instance, the recent Berlin Music Hack Day was host to one brilliant creation that transformed Native Instruments' Maschine into a music game played by two players; and Jason Penca's iLoveAcid generated a game-like wireframe 3D interface for music sequencing. With the prospect of greater interaction between music and games, 'playing music' could take on further meaning in the future.



CDM: Downsampled is brought to you by Create Digital Music, the must-read online blog expressing the long view on music technology trends.
www.createdigitalmusic.com

Digidesign Rack it up

Digidesign unleash the Eleven Rack interface/amp modeller



Digidesign's new interface and rack effects unit should have guitarists cranking it up to 11

> Digidesign have released an interface/amp modeller/effects processor based on their Eleven plug-in (which scored 8/10 in cm125). The new hardware unit, Eleven Rack, "combines a hyper-realistic guitar amp and effects processor with a high-quality computer recording audio interface, to create the ultimate recording and performance solution for guitar players," according to the company. It also comes with an "optimised for guitar players" version of Pro Tools 8.

Eleven Rack is a DSP-powered interface that connects to your computer via USB 2.0. The main guitar input is the True-Z 1/4" jack, which automatically matches the impedances of real stompbox and amp inputs, ie, depending on which patch you call up. Other connections on the front panel include an XLR mic input (with independent gain and switches for phantom power and a pad), an Output to Amp 1/4" jack and a headphone socket.

Round the back are two line-level inputs; the main stereo XLR outputs; stereo sends and returns for using external effects; MIDI in/out; a second Output to Amp (which can be used alongside the first for sending

stereo signals); an input for an additional expression pedal; and digital AES/EBU and S/PDIF ins/outs. All in all, then, Eleven Rack boasts pretty comprehensive connectivity.

The amp, cab, mic and effects modelling are taken care of by the unit's dual DSPs, which helps reduce recording latency and keeps your computer's CPU free for other tasks. There are 12 amp simulations in total, based on Fender, Marshall, Vox, Soldano and Mesa/Boogie hardware. The cabs are modelled on Fender, Marshall and Vox units. Effects-wise, there are 17 emulations, which replicate some famous Ibanez, Fender, Boss, Electro-Harmonix and MXR pedals. The mic simulations on offer are said to be based on Shure, Sennheiser, Neumann, AKG and Royer models. There's also a tuner onboard.

There are six knobs on the front panel for making parameter adjustments (with a screen showing value changes), as well as effects on/off switches, buttons for editing/saving patches and a rotary encoder for scrolling through presets and menus.

Digidesign's Eleven Rack is out now for Mac and PC, priced £788.

www.digidesign.com

Voxengo gain ground

> Voxengo, purveyors of many fine plug-in effects, have released their latest processor, TransGainer.

TransGainer's processing reacts to

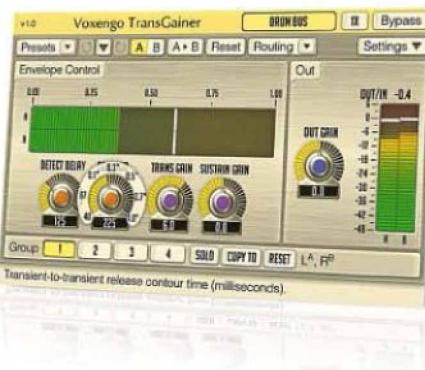
transients in a signal, rather than the absolute signal level, and you can use it to independently adjust the attack and sustain levels of a signal. The unit can also be used during the mastering stage - for taming excessive reverb tails, for example.

Also, Polysquasher, the dedicated mastering compressor with threshold, ratio and gain controls, has received a v2 update.

Voxengo's TransGainer and Polysquasher (both for Mac and PC) are out now, priced \$60 and \$70 respectively.

www.voxengo.com

Need to make adjustments to your transients? You'd best check out Voxengo's TransGainer



Trackers & Demoscene



We reveal the winners of the recent Sundown 2009 Demoparty in Devon

> Two issues ago, we mentioned the obscure RBI Baseball-themed Renoise music competition. Congratulations to Blac Waldo who won with his Aphex Twin-inspired Chicken Eggz 2.0. Hear it at downloads.renoise.com/mbc2.

And congratulations also go out to DTV (www.demoscene.tv), who are celebrating their fifth year of serving the demoscene community. If you're unsure of what a demo looks like, it's the perfect place to find out!

Back in mid-September, we spent three

"The atmosphere was friendly and the competitions yielded some top quality productions in old and new school disciplines"

days at Budleigh Salterton on the Devon coast, entrenched firmly in the village hall. The venue was playing host to the Sundown 2009 Demoparty, where the atmosphere was friendly and the competitions yielded some top quality productions in old and new school disciplines. Our favourite, Ate Bit's *Ahh... the tape loading era!*, was at once both nostalgia-invoking and refreshing, no doubt due to its novel demo-in-a-tape-loader approach.

DEMO OF THE MONTH

Ephemera by Approximate

Released at Sundown, *Ephemera* took well-deserved first place in the demo competition. The theme is wooden and mechanical contraptions (including a rather cool 3D player piano), with neat segues linking the demo's bizarre and disparate parts. Combining modelled visuals and sublime music, this is one of the most elegant 64K productions we've ever seen. Find the links to this and more on your cm DVD.



Approximate keep their eyes on the prize



When should I upgrade my operating system?

> There's something appealing about being an early adopter. Silly though it may seem, having access to technology that others are only admiring from the blogosphere can make you feel like a leading-edge trailblazer - a pioneer even. However, being first isn't always best, particularly when it comes to operating systems...

While you do have the comfort of knowing that and teething problems can usually be rectified with a freely downloadable update, there's also the fear that, because developers know that they have this patching safety net, they may be happy to let the initial users of their

pressing one. Apple released OS X 10.6 (Snow Leopard) just a couple of months ago, and Microsoft's Windows 7 will be available by the time you read this. As you'd expect, both of these operating systems claim to improve on the capabilities of their predecessors, but as a computer musician, is it better to dive in or to sit tight?

In light of the well-documented compatibility issues that plagued the launch of Windows Vista, it's reasonable to suggest that many PC musicians will be wary of installing Microsoft's new OS on their computer. However, Cakewalk's Noel Borthwick is optimistic that Windows 7 will be far better received than Vista.

Core blimey

"Windows 7 finally appears to have addressed many of the problems of its predecessor and is more CPU efficient," he says. "We think that many users will ultimately switch to Windows 7 for its greater efficiency with multiprocessing."

Improved performance on multicore machines is only one of the benefits awaiting Sonar users who switch to the latest version of Windows, says Borthwick. He also cites better support for both Windows audio/integrated audio devices (on x86 and x64

systems) and for the WaveRT event mode for integrated audio devices.

On a less DAW-specific level, Borthwick points out that there are other reasons for musicians to be cheerful about the arrival of Windows 7. "While a stock Windows 7 system is not necessarily optimised for music production applications, Microsoft did some more work into trimming out unnecessary startup tasks to cut down on startup time," he explains. "There are now 'Triggered start services' in Windows 7, so you can have fewer services running after a fresh boot, since these services are only started on demand. This allows for a better out-of-box experience with Windows 7 and performance-hungry multimedia applications."

Future features

Further noteworthy features, claims Borthwick, include Core Parking, which enables you to transfer processing to particular cores, while putting less busy ones to 'sleep' (thus saving battery life on your multicore laptop); Libraries, which enable you to categorise and create shortcuts to specific collections of content (which sounds could be very handy for organising your samples); better performance on less powerful computers; improved media file format support; and automatic file format transcoding.

New features, however, are all well and good - what's more important is that they work properly, and that their usefulness isn't negated by incompatibility issues. Can Windows users really feel confident that using the bleeding edge version of the operating system isn't going to turn into a bleedin' nightmare?

"One of the goals of Windows 7 was backwards compatibility with Vista, so in general, it should be a painless upgrade process," believes Noel Borthwick. "Sonar 8.5 and all our newer products are fully compatible

"There are always issues that slip through developers' testing procedures"

new OS discover these issues for them. For there are always issues that slip through developers' testing procedures - that's just the nature of software.

The question, then, is when - or even if - you should upgrade, and right now, it's a particularly

Ins & outs

and tested with Windows 7. As long as you ensure that all the software and plug-ins you rely on are also compatible, it should be trouble-free."

Going for broke

With many of us having hefty plug-in collections, we'd advise that you heed Noel's words here. Indeed, not everyone believes that you should automatically upgrade your operating system just because the option to do so exists.

Writing on his Analog Industries blog (www.analogindustries.com) following the launch of OS X 10.6, Audio Damage's Chris Randall recently delivered this simple message: "If your shit ain't broke, don't go fixin' it."

He continued: "This is your mantra. Repeat it often. If you update to Snow Leopard the day it is released, you have to be comfortable with the knowledge that most developers got their copies of Snow Leopard the same day you did, and the more (or more sophisticated) products they have, the longer it will take to verify everything. This is doubly true for products that rely on other things to work (like Audio Units and VSTs)."

When OS X 10.6 was launched, Peter Kirn at Create Digital Music set up a dedicated Snow Leopard Watch page (createdigitalmusic.com/snowleopard) that features compatibility updates from various music software and hardware manufacturers. The message to be gleaned from this is that, although many companies are cautiously prepared to say that their products should work with the new OS, far fewer are officially supporting it from launch. That said, things change very quickly and the land will almost certainly lie differently by the time you read this, but in case you hadn't already guessed, Chris Randall certainly advocates a wait and see approach.

Just say no

"There is no reason to update to Snow Leopard at this point," he notes. "There is no commercial audio software that requires it right now, and there won't be for several months. If you do so, you don't really get to bitch about it, because we developers haven't had time to digest Apple's latest curve balls. If we haven't sorted things out in a month or two, then you can bitch."

That said, just as with Windows 7, there are non-music-specific reasons to think about installing Snow Leopard (which, incidentally, is the first version of OS X to require an Intel processor). It takes up around 7GB less space than its predecessor, for example, which will attract capacity-starved laptop owners in particular, while both boot and shutdown times have been reduced. Users should also benefit from a more responsive Finder, and nearly all built-in applications are 64-bit.

Ultimately, whether you're a Mac- or PC-based musician, what you have to decide is whether you're willing (or can afford) to trade some of the reliability of your existing system for the potential benefits of an upgraded OS. At the moment, there's no prospect of the preceding versions of either Windows or OS X being phased out - Noel Borthwick estimates that even Windows XP will be supported for "a couple more years or so" - so it's important to remember that you do have a choice. **cm**

SPOTIFY GOES OFFLINE

Streaming music service Spotify has added an offline caching feature, effectively enabling users to download as much music as they like for their monthly fee, the caveats being that the tunes are DRM-protected and you have to listen to them in the Spotify app.

CHAS NOT DAVE

cm's rockney act of choice, Chas & Dave, have parted ways. Dave has retired from the group, leaving Chas And His Band to tackle classics such as *Ain't No Pleasing You* and *Snooker Loopy*.



SOUNDATION FOR THE NATION

PowerFX have launched the beta version of a web-based sequencer called Soundation. It includes over 400 royalty-free audio loops, nine effects, automation, basic editing, timestretching and more. Head on over to www.soundation.com to check it out!

POLARISING OPINIONS

Sony have been showing off their new 3D television technology. Special polarised specs are needed to see the 3D effect, but without them it's just like watching normal telly. With the UK's first 3D TV channel going live in July, is 3D finally hitting the mainstream?

GEOCITIES EVACUATED

During the late-90s, Geocities was the premier free webspace vendor. Sadly, by the time you read this, Yahoo! will have shut down the 'Cities for good, taking millions of hideous websites with it.



APPLE TAKES BITE OUT OF W
Australian supermarket chain Woolworths are on the receiving end of a legal challenge from Apple due to their new logo - it's a green stylised W that Apple seem to have confused with their own logo of a silver apple with a bite taken out of it. Get a grip, Apple.

Busting jargon



Computer music terminology explained.
This month: **Bit depth**

Digital audio signals are not continuous like analogue signals - instead, they're like an animation that's made up from discrete frames. Each 'frame' is called a sample (which is also the term used to refer to a series of samples!) and stores the volume level for that moment in time - in simple terms, playing back a series of samples of varying levels creates the illusion of continuous audio.

The sample rate is like the frame rate, describing how many samples are captured per second, whereas bit depth is concerned with the resolution of each sample. To use our visual analogy again, a low bit-depth could be equivalent to, say, a picture using only eight different shades of grey, as opposed to one with so many shades that the gradation looks smooth and continuous.

The bit depth determines how many different levels a sample can possibly represent. 8-bit was common in 80s samplers, and because each bit doubles the number of possibilities, this only gives 256 levels ($2^8 = 2 \times 2 \times 2 \times 2 \times 2 \times 2 = 256$). This means that signals are

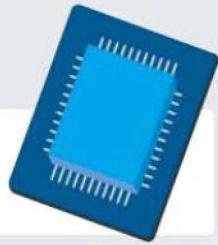
quantised to the nearest value, giving a 'stepped' waveform. This is manifested as grotty quantisation distortion - however, in a properly designed system, something called dithering is used, which basically converts the distortion into noise (which actually sounds nicer). 16-bit audio has 65,536 possible levels, and 24-bit is as good as anyone needs for recording and playback, giving about 16 million discrete values - quantisation distortion is pretty much a non-issue.

However, plug-in instruments and effects that generate or process audio use even more precise bit depths of 32-bit and 64-bit internally, and what's more, they use 'floating point' values - hang on till next time and we'll explain!



On the left half, a sine wave quantised due to a low bit-depth, with the same wave on the right with a higher bit-depth

System check



Weird and wonderful goings-on in the world of computer technology

BAMBOOZLED

Windows 7 may be here in all its multitouch-supporting glory, but there aren't exactly a huge number of multitouch interfaces available. There will no doubt be plenty of high-end touchscreen-based PCs to pick from in the future, but if you're in a hurry to experience the joys of multitouch in the short term, this new device from Wacom could be just what you're looking for. The second generation Bamboo tablet is the first device to combine multitouch and pen tablet technology, and it allows users to take advantage of Windows 7's huge range of touch commands for a mere £75. A touch-only version without pen support is also available and costs £60.

www.wacom.com



Keep taking the tablets with Wacom

BEAM TEAM

Boffins at Bell Labs in the USA have managed to transmit data at a whopping 100 Petabits (100 million Gigabits) per second per kilometre using 155 lasers at different optical frequencies. To put it in real terms, that's the equivalent of sending 400 DVDs worth of information per second over 7000 kilometres.

The researchers increased capacity by using advanced digital signal processors with coherent detection, a new technology that allows for an increased number of light sources to be introduced into a single fibre while still making it possible to split the light into its constituent colours when it reaches its destination.

The technology isn't ready for prime time yet, so it'll be a while before we're all beaming entire sample to each other in the blink of an eye. Still, it's something to look forward to, eh?

www.bell-labs.com

NOTEWORTHY

You might think your current notebook is a swanky enough bit of kit, but this month has seen the big players show off some amazing new concepts for future portable computers that make today's efforts look a little lacking.

Intel's new prototype laptop has three miniature OLED touch-screens below the traditional 15-inch screen, and applications can be "flipped" between the OLEDs and the main screen.

Sony, meanwhile, have an even more ambitious effort, in which the separate screen and keyboard are replaced with a single flexible touchscreen display.

Finally, details have been leaked of Microsoft's Courier, which is a dual touchscreen tablet with multitouch and stylus interface. We should point out that, as exciting as these concepts are, none of them are anywhere near production just yet so you should keep a hold of your current laptop for a little while longer.

www.intel.com

www.microsoft.com

www.sony.co.uk

> news

White Noise Audio Software

David Wallin

White Noise Audio's founder talks about the challenges involved in making an iPhone app



Eye on the Industry

cm What's your background in music and programming?

DW "My first music plug-ins were for Buzz, back in 1998. I didn't really know much about DSP, but Buzz was an easy platform to experiment with and learn. I ended up doing about 30 plug-ins for Buzz. Eventually, VSTs started to really catch on and I decided to turn my hobby into a business. I've been a programmer longer than I've been a musician, so wanting to apply programming to music came pretty naturally."

cm Your latest product is bleep!Box for iPhone - is it hard to make an impact in the crazy market of the App Store?

DW "With 65,000-plus apps on the iPhone, it can be really hard to stand out in any category. Music is especially hard, given that it contains music-making apps

and music-listening apps and no sub-categories. Sales are very dependant on your App Store rank (which determines what page your app is on, and thus how hard it is to find). I work for a marketing company during the day, so I've employed a number of methods, including Twitter, Facebook, YouTube videos, forum posts, etc."

cm What's the iPhone Software Development Kit like?

DW "The SDK is nice. Getting apps up and running is fairly easy and there are a lot of examples. Testing and deployment can be a bit frustrating, given Apple's provisioning system, but the step-by-step instructions help get it done. Probably my least favourite part of the SDK is the language itself, Objective-C. I chose to use libNUI, so I could work primarily in C++. In addition to making it easier to leverage my existing experience and code, it saved me from having to deal with Objective-C's bug-prone retain-release memory management."

"Keeping it simple and organising things on several screens is the key"

cm What challenges did bleep!Box present?

DW "Keeping the app running well with limited CPU was a challenge. I've had other developers ask me how I was able to

handle so many voices at once. Over the last five years now, I've been working on my own audio framework, and I also used it in bleep!Box. It saved me a lot of time. Also, interface design is very challenging - the buttons have to be very big, so you can't fit very much on one screen. Keeping it simple and organising things on several screens is the key."

cm Could the App Store model work for plug-ins?

DW "I think the App Store model has proven to be very successful. People want a no-hassle, on-demand experience for music, movies and games. I think it could easily work in other markets, like audio plug-ins. Not only is it nicer for end users, but it gives indie developers the ability to compete on a (somewhat) even footing with big-name companies."

cm What's next for White Noise Audio Software?

DW "I have lots of things planned: I want to update some of my VSTs and port them across to Mac, I might do one more iPhone app, and I'm also working on my own sequencer software."

Sony Forge ahead

Even though most modern DAWs feature comprehensive audio editing facilities, there's still much to be said for having a dedicated program to do the job. Sony Creative Software no doubt agree, for they've released Sound Forge Pro 10, the latest version of their audio editing and mastering software.

Sound Forge Pro 10 can be used for a variety of tasks, including recording, event-based editing (new to this version), audio restoration, creative sound design, mastering (catering for most of the popular audio formats, including WAV, AIFF and MP3) and Red Book CD burning. This last feature is brand new for version 10, uses an integrated disc-at-once (DAO) feature and can encode meta-data.

There are 40 effects in the package now, including the new Resonant Filter plug-in and the Noise Reduction 2 package, which comprises Noise Reduction, Audio Restoration, Click/Crack Removal and Clipped Peak Restoration plug-ins. Also new to Sound Forge is zplane's élastique Pro timestretching and pitchshifting plug-in, which includes Pro, Soloist and Efficient modes, as well as formant-shifting controls.

Courtesy of iZotope comes the Mastering



Sound Forge Pro 10 can be used for audio editing, restoration, Red Book CD burning and mastering

Effects Bundle 2, which contains Mastering EQ, Mastering Reverb, Multiband Compressor, Mastering Limiter, Stereo Imager (for adjusting stereo width) and Harmonic Exciter. Judging from the appearance of these, we think they're derived from iZotope's splendid Ozone mastering plug-in. Further contributions from iZotope are the MBIT+ Dither and 64-Bit SRC plug-ins, which are a bit-depth and a sample-rate converter respectively.

Sony Creative Software's Sound Forge Pro 10 for PC only is available now, priced £380.

www.sonycreativesoftware.com

News in brief

SB'S ELOQUENT THESYS

Last month, we reviewed Sugar Bytes' MIDI step-sequencing plug-in Eloquence, awarding it a tidy 8/10. However, the German company have since had to rename the plug-in, as it transpired that the Eloquence trademark was already owned by another company. Eloquence has therefore been rebranded as Thesys. Don't say you haven't been told.

www.sugar-bytes.de



PERCEPTIVE MIC FROM AKG

AKG are extending their Perception series with their first USB condenser microphone, which enables recording straight to the computer with no need for an audio interface. The Perception 120 USB records at 44.1kHz or 48kHz, with niceties including a bass-cut filter, 20dB pad and integrated pop shield. AKG's first USB mic for Mac and PC, the Perception 120 USB, should be available in Q4 2009. However, the pricing information is as yet unconfirmed.

www.akg.com

SAMPLE LOGIC MORPHESTRA

Sample Logic have released Morphestra, a new ROMpler powered by Native Instruments Kontakt Player 3. Derived exclusively from orchestral recordings and psychoacoustic sound design, the massive 27GB Morphestra library, featuring over 1200 instrument patches and multis (with effects), is supplied pre-installed on an 80GB Glyph hard drive. It's out now, priced £439.

www.timespace.com

VINTAGE UPDATES

Arturia's CS-80V (£175) is now at version 2.0, which sees audio quality refinements for the filter section and ring modulator, as well as the inclusion of SoundMap - first seen on the minimoog V 2.0, this preset navigation tool enables you morph between patches in real time. Also updated is Moog Modular V 2.5 (£175), which has had its audio tweaked too.

www.arturia.com

Game overture



The latest instalment in Microsoft and Bungie's titanic and massively popular *Halo*

franchise, *Halo 3: ODST*, has finally hit the shops. In addition, its truly immense musical score, co-written by Martin O'Donnell and Michael Salvatori, is also available to buy from top game music label Sumthing Else Music Works.

"The music reflects the new mood, new heroes and new story of the game," said Martin O'Donnell in a recent interview. "I worked with the Northwest Sinfonia for the orchestral recordings and also added some nice alto sax solos and some new guitar solos. Perhaps some folks might find it strange to hear an alto sax while playing a *Halo* game, but I think that it works pretty well. The piano sneaks back in again a few times, too, but I can't seem to help that."

If you're a serious *Halo* fan, or you find that you simply like to immerse yourself in the bombastic stylings of these two heavyweight composers, we highly recommend that you check this latest release out.

Game overture is brought to you by www.music4games.net, the ultimate games soundtrack resource

Soundware news

Zero G have unleashed Electro House (£60) containing over 1000 drum, bass, synth and FX loops and samples across 1.6GB of dance-floor-friendly content. From Best Services there is Accordions (£129), comprised of eight multisampled accordions and eight more multis in different registers across 2.7GB. Also from Best Service comes Black Pearl (£75), including construction kits, samples and loops in "radio-ready" hip-hip/R&B vibes.

www.timespace.com

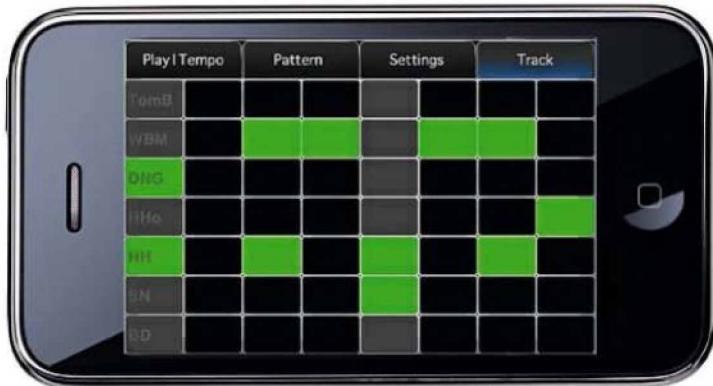
The latest Loopmasters' Artist Series is Breeze & Styles Extreme Hardcore (£35), with 1.5GB of loops/hits by the famous duo.

www.loopmasters.com

From Sounds/To/Sample comes Techno Melodik (£18), featuring 250MB of synths, FX, beats, basslines and melodic loops in a dark techno style. rv_samples have released the three volume Thomas Penton's Complete Essential Series (£34), comprised of over 4000 beats, FX and musical loops designed for deep, electro and tribal house.

The new Pro Series Urban Orchestra (£20) from FatLoud provides 100 loops and 30 "vinyl-infused" one-shots/chord stabs. From Bunker 8 comes Nemesis: Drum Collective 1 (£18), which includes 49 raw drum loops, 51 construction kits and 128 FX drum loops for breaks, funk and trance styles.

www.soundstosample.com



From left to right: Intelligent Gadgets' MIDI Recorder, Jouni Erola's DrumSequencer and Agile Partners' Star6

The pursuit of 'Appiness'

A round-up of the latest music-making apps for iPhone and iPod Touch

> Intelligent Gadgets have released MIDI Recorder, which employs the iPod Touch 2G (or later) or iPhone's built-in microphone to convert monophonic melodies from an acoustic instrument or the human voice into MIDI files. The resulting files can then be transferred to your computer via web server or email and imported into your DAW of choice. And from watching the online videos, it seems that the app can convert fairly simple melodies with pretty accurate timing and pitch results.

Intelligent Gadgets' MIDI Recorder (£1.79) is available from the App Store now.

www.intelligentgadgets.us

Courtesy of developer Jouni Erola comes DrumSequencer, an app for composing drum beats. There are multiple drum kits onboard, although you can't load your own sounds. Rhythms are sequenced in a grid matrix, then saved into one of 12 Pattern slots per Bank (six Banks are available in total) and played back in any order you like. There are some real-time effects, too, including "really nasty-sounding distortion" and Lo-Fi units. The app can be synced to a beat or via the tap-tempo function.

Jouni Erola's DrumSequencer is out now in the App Store, priced £1.79.

mii.tuu.fi

Breakcore producer Jason Forrest has teamed up with agile partners to bring you Star6, a sample playback and remixing tool. There are six slots for triggering the onboard samples, and you can download more from the company's website or upload your own. Effects-wise, six are accelerometer-controlled - Pitch, Speed, Gate, Jitter, Size and Random - and there are Filter, Delay and Distortion units, too. The tempo can be set from 1-303bpm, with effects set to Sync or free Grain modes.

Agile partners' Star6 (£3.99) is available from the iTunes App Store now.

www.agilepartners.com

PreSonus get fired up

PreSonus release portable FireWire interface, FireStudio Mobile

> Adding to their roster of FireStudio audio interfaces, PreSonus have released the ultra-portable FireStudio Mobile, and it certainly isn't limited in terms of connectivity or features.

FireStudio Mobile is a ten-input/six-output device that connects to your computer via a FireWire 400 cable, which can also provide bus power (although a 12V power supply is supplied). A second

port can be used for daisy chaining other FireWire devices, such as further FireStudio interfaces or an external hard drive. The portable, lightweight unit can be screwed into a standard 19" rack tray if you want to give it a more permanent home, too.

There are eight analogue inputs, with two mic/instrument combo jacks on the front - mics plugged in via XLR are routed through PreSonus' XMAX solid-state preamps with switchable phantom power. Also on the front panel are LED input level/clip meters and gain knobs for the first two channels, as well as level controls for the headphones socket and Main outs.

The rear panel hosts six balanced TRS inputs, the main stereo output pair and a DB9 socket for the included breakout cable, which supplies S/PDIF digital and MIDI I/O.

PreSonus' FireStudio Mobile for Mac and PC should be out now, priced £269.

www.presonus.com



PreSonus' new FireStudio Mobile provides great connectivity for producers on the move

Build your dream PC

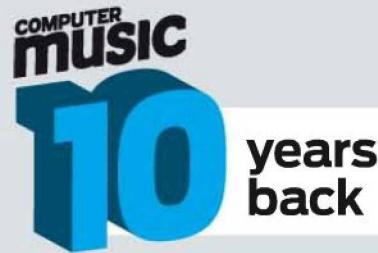
> Having been in business for nearly ten years, UK-based manufacturer and supplier of music PCs and pro audio equipment Inta Audio have launched a brand new website.

It features an easy-to-use, three-step PC configuration service for choosing a custom music computer online, as well as options for adding other studio equipment.

www.inta-audio.com



Building a custom music PC has been made into a painless process by Inta Audio's new website



cm15 saw in the year 2000 with our predictions for the future - did we get it right?

> As **cm** moved into the Noughties, the team broke out their crystal balls for a piece entitled *Computer music: the next Millennium*. We proclaimed that "in the next year-and-a-half, we can optimistically expect computers to double in speed", adding that "by 2010, they would be pushing 100,000MHz!" That's a whopping 100GHz, which has been achieved in the lab, but current consumer technology doesn't get much past 4GHz. However, when you take into account today's multicore technology and the fact

"Elsewhere, we hinted that solid state drives were the future of storage"

that newer chip designs are typically more efficient at crunching numbers at a given clock rate, it's clear that a GHz value isn't necessarily the biggest indicator of a chip's true processing power.

Elsewhere, we hinted that solid state drives were the future of storage. In fact, we reported that Professor Williams of Keele University had invented a credit card-sized SSD capable of storing 3.4TB (3400GB), which still sounds impressive by today's standards, and he reckoned the production cost would be £30! We're still waiting, though, it seems...

One beloved reader, whose name we will kindly omit, predicted that "while the internet is great for freebies and info, I can't ever see it being the best resource for promoting your music". Oops!



cm's January 2000 issue took a peek at the future of computer music, with hit and miss results



Drive time

Jas Shaw

One half of synth-loving duo Simian Mobile Disco (left) reveals his must-have software

DIGIDESIGN PRO TOOLS 8

"For audio-editing, Pro Tools is definitely the quickest DAW - it's also in every pro studio I've ever been to. I'm sure we could work on other systems, but Pro Tools feels the most transparent. It doesn't do anything to the actual audio, which is ideal for us, as then all of the interesting stuff has to come from outside the computer."

ABLETON LIVE 8

"I remember thinking when it first came out that it was revolutionary. For us, it's a great sketch-pad while you're on tour and for getting your ideas down as simply as possible. It's quick, and the best thing is its non-linear - it works in terms of the loops, ideas and sounds, like a performance. In terms of song structuring, particularly for electronic stuff, it's amazing. In a live environment, it just can't be beaten."

NATIVE INSTRUMENTS REAKTOR 5

"Native Instruments Reaktor was one of the ways I originally got into the world of modular synths. This unique software is absolutely amazing for knocking ideas up, if I don't happen to have my rig in front of me, or even for building sequencers that kick out MIDI and integrate with my hardware. It's also great to have a sequencer that'll

clock like a master-clock and put out notes that are actually in tune!"

CYCLING '74 MAX/MSP

"Our friend Jamie Liddell got me into this. It's text-based, which is a slight hump to get over in terms of programming, but I think you can go even deeper than Reaktor. I can imagine losing myself in Max/MSP, although there's always the danger with these

"For audio-editing, Pro Tools is definitely the quickest DAW"

programs that you end up making several gigabytes worth of boxes (modules) but no actual music."

AUDIOMULCH 2.0

"We got into this ages ago, as Kieran Hebden (aka Four Tet) swears by it. It was PC-only for a very long time, but you can get it for Mac now, too. Most soft synths I've ever used seem to have a certain nasty, shiny top-end. However, AudioMulch is one of the few virtual synths that has a nice sound that we actually really like."

SMD's new LP, *Temporary Pleasure*, is out now on Wichita Recordings
www.simianmobiledisco.co.uk

TAL-Reverb

Togu Audio Line certainly produce a lot of free plug-ins, and this latest ambience effect proves that the quality is always high, too



Developer Togu Audio Line
Format PC VST, Mac AU and VST
Web kunz.corrupt.ch

The prolific Togu Audio Line's latest release is a departure from their usual virtual analogue synth fare. TAL-Reverb is a straightforward algorithmic reverb effect with an uncluttered interface. We caught up with TAL main man Patrick Kunz to find out more about the new freebie. So, Patrick, why release such a simple reverb plug-in when there are so many other software 'verbs available?

"I make music myself and have tried a lot of different reverbs and plates, but I never found a suitable reverb that had the sound I wanted, so I decided to make my own. I tried to make a very smooth, stereo plate-type reverb, which is not designed to simulate realistic environments as the most others do: I wanted it to sound musical, transparent and have an airy sound in the highs, just like the reverbs and plates of the 80s. Six randomly modulated delays per channel give the reverb a smooth, artifact-free, transparent sound. TAL-Reverb also has a naturally 'dry' stereo sound, compared to other stereo plates. It doesn't just phase shift the left and right stereo channel to get the maximal stereo image, it gets the most out of the stereo sound using modulated delay lines."

"Finally, I got the sound I wanted and I'm pretty happy with the result. This plate maybe isn't the right choice for material with a lot of overtones, like a sawtooth synth, but I don't think any plate does that well. It's suitable if you

need to put space around voices, drums, percussion, guitars and so on. I wanted it to be easy to use, without early reflection stuff and other complex parameters - I'm not a preset user and get in trouble if I have too many modulation possibilities!"

Do you think algorithmic reverbs still have a place, or are they destined to be replaced by impulse response effects?

"I asked this myself, too. Before I started with TAL-Reverb, I bought an IR Reverb with a lot of impulses, but I only used the impulses of legendary effect processors - I don't like real rooms! I liked the sound very much, but the impulses have one disadvantage: they are static snapshots. The sound does not move as it does on real algorithmic reverbs. Some people maybe think 'no problem, we'll put some chorus or other effects on the impulse,' but this isn't the same. Good sounding hardware reverbs have a lot of delays, and each of them is modulated independently. That way you get a living, musical sound. I don't think you can get that with a single impulse."

Finally, do you have any tips for users of TAL-Reverb?

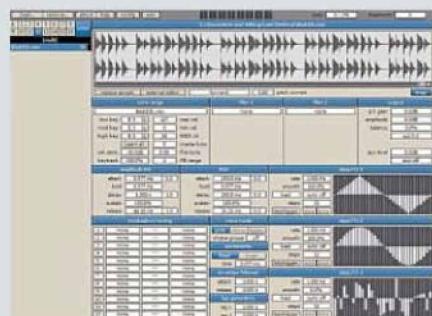
"TAL-Reverb doesn't have a big EQ section - just 12dB low-pass and high-pass filters. At first sight, this seems to be a big disadvantage, but using TAL-Reverb on a send with your own favourite EQ works really well. If you use a bitcrusher pre- or post-effect, you can get some interesting lo-fi sounds, too!"

You can find TAL-Reverb in the **Software** folder on this month's **cm** DVD.

Dr Oktagon
 That reprehensible freeware-coding fiend Kriminal has released yet another PC VST synth upon the unsuspecting public. Oktagon has eight oscillators, each with a choice of waveforms, manual and LFO-based pulse width modulation, a multi-mode filter with dedicated LFO, amplitude and filter envelopes, and, last but not least, both mono and poly modes.
homepage.ntiworld.com/lisa.millington/

Pettin' better
 Kontakt patch pushers Pettinhouse have released a free version of their fantastic ClassicGuitar package. ClassicGuitarFree requires either Kontakt 2.2, 3 or 4, and includes a single, dry, nylon-string guitar patch from the commercial version, comprising 169 unique samples, including release samples for each note and a round robin feature. Pettinhouse claim that it's perfect for any kind of "finger style" music.
www.pettinhouse.com

Smokin' Budde
 Christian Budde has gone plug-in crazy over the past month, releasing a veritable cornucopia of new ones, including the Shepherd tone-style "infinite flanger" Barberpole Flanger, the variable order cascaded butterworth filters of Dual Linkwitz-Riley Filters, Bugpass (lite) and the intriguing ASIO-Host, which enables you to use an external device via ASIO through a VST plug-in interface.
www.savioursofsoul.de/Christian/



Freeware Classic shortcircuit

Developer Vember Audio
Format PC VST
Web www.EMBERaudio.se

Shortcircuit from Vember Audio is without doubt one of the best soft samplers around, free or otherwise. It's got tons of modulation options, filters and effects, and a great sound. Originally a commercial endeavour, it was made freely downloadable by its creator, Claes Johanson. So why set your baby free, Claes?

"The main reason for giving away shortcircuit was that I didn't feel I had the time and energy to finish version 2.0 in a manner I would be content with for a commercial release. shortcircuit 2 was too big of a change in many ways and kept bleeding more time than I ever expected. I didn't feel it was fair to the users to leave it in a 'coming soon' state indefinitely, which

"The sampler engines of the sequencers just have to catch up"

basically left me with two choices: either discontinue it and get nothing out of it, or dominate the freeware scene with shortcircuit and use it to draw attention to surge, which was a way better seller already. In this light, the latter was an obvious choice."

How do you think sampling technology will develop in the future?

"Sample mangling is something I believe you will do to a larger extent directly in your sequencer. Triggering samples via MIDI can never compete with the ability to manipulate the sample data directly, which completely eliminates the guesswork of getting samples to fit just right in the timeline, since you can see what's happening and adjust accordingly. The sampler engines of the sequencers just have to catch up with the sampler's features to get there."

You can try out shortcircuit for yourself right now - it's in the **Software** folder on the **cm** DVD.



ON THE DVD
TUTORIAL FILES

The various files and patches referenced can be found in the Tutorial Files/Retro Sounds folder

VINTAGE SOUNDS

Emulate old-school drum machines, synths, samplers, tape machines and more with our guide to making classic studio sounds in software

> It's a strange phenomenon and one as old as culture itself. Older generations almost invariably cast a scornful eye on the music and art of today, while younger musicians worship at the altar of past performers and producers. We embrace the technology that enables us to achieve our musical goals, while at the same time waxing nostalgic about the recordings of the past. Some of it may indeed be down to nostalgia. Perhaps we revel in the warm, tube-saturated glow of those tracks because of their familiarity. There are decades worth of recordings made with tapes, valves and solid state circuitry. The engineers of the past might have striven to circumvent the limitations of their equipment, but at the same time, the flaws of

the gear that they used scrawled an indelible and instantly recognisable sonic signature across our favourite records. It's perfectly understandable that we might feel a certain sentimental (if often subconscious) attachment to the sound of recordings that inspired us to pursue music in the first place.

However, we can't ascribe the appeal of vintage recordings solely to familiarity. Many of today's musicians and producers grew up in the nightclub rather than the record store and wouldn't know a Joe Meek from an Eddie Kramer (go on, look them up), yet these musicians are likewise drawn to the warm glow of voltages and valves. The fact is that our modern computer-driven studio can be a bit too clinical, rendering everything we do as a string

of perfectly predictable zeros and ones. It encourages copy and paste arrangements, precise pitch and unwavering tempo. In short, if not used with discretion, the same tools that enable everyone to produce high-quality music on their laptops make it all too easy to create recordings that are, well, boring.

So what can we do about it? How can we add a bit of vintage vitality to our tracks? Do we need to buy racks full of costly second hand hardware? Absolutely not. As software-based producers, we can get everything we need to pump up the retro vibe at little or no cost. All it takes is a bit of creativity and effort. In this tutorial, we'll give you all the knowledge you need and walk you through some of our favourite old-school production techniques.



The evolution of music technology

Everything old is new again, or so the saying goes, and it certainly rings true in the world of music production. We've recently seen rehashes of all things 70s, and you'd have to have been living under a rock not to have noticed that an 80s revival is in full swing. Even the 60s are threatening yet another return, thanks to the anniversary of Woodstock and the remasters of the entire Beatles catalogue. We expect to see a new generation professing allegiance to tube mics, ADT and muted 'pudding' drums.

Time stamps

Electronic music has an exciting history of characterful synths, sequencers, drum machines and effects that chronicle its evolution over the past five decades. Electronic musicians have traditionally been right on the razor's edge of music technology and, for better or worse, the tools that they employ often time-stamp their music with the sound of the era in which a given track was conceived. More often than not, the latest technology drives the compositional process, featuring prominently in the music of the day until it's absorbed into the mainstream. Who can forget the early days of sampling, when the airwaves crackled with stuttering eight-bit vocal repeats and grainy orchestra stabs? We're looking at you, Trevor Horn, and don't think we can't see you over there, too.

Paul Hardcastle brought the sampler out of the lab and straight to the top of the charts in 1985

Hardcastle. It took a few years for samplers to become merely another colour in the sonic palette of the electronic artist at large.

Electric dreams

And yet it's the garish, over-the-top abuse of a given technology that defines the music of the past. Why should this be so? Perhaps because the technology was used in such an exhibitory way, or maybe it was that the equipment itself was new and therefore unrefined. It lacked the finesse and subtlety that would be introduced as the technology matured. Take the drum machine. Early sampled drums are easy to spot, with their incessant, unwavering rat-a-tat-tat beats. Those first units lacked velocity control and put out their paltry handful of samples with no variation whatsoever. As drum machines matured, they became ever more convincing and, in the process, lost much of the character that now appeals to us. Sure, modern soft samplers and beatboxes can sound like any kind of drummer you can imagine, but that sophistication robs them of the unique qualities that made them stand out in the first place. Subtlety and lifelike nuance might be just the thing for the aspiring singer-songwriter,

but the purely electronic musician likes 'em boldly, brashly to the fore.

We could obviously

make use of vintage gear to generate a retro sound, and many musicians have done exactly that. Unfortunately, the days of stumbling into a weathered old LinnDrum in Cash Converters are long gone. Vintage gear trades for ridiculous amounts of money in the online auction houses. Further, that gear is showing its age - vintage machines require time and money just to keep ticking along.

The answer, then, lies in modern technology. We have at our disposal an endless array of tools that offer unsurpassed power and flexibility. It should, therefore, be a simple matter to recreate these primitive instruments and production techniques, assuming that we have a pretty good understanding of what gave those old tracks their particular sound. Why did those old samplers sound like they did? What was so special about the old analogue and early digital synthesisers? How did sequencers differ from those in our current DAWs? What were the prevailing recording techniques of a given era and how do they compare with those of today? A thorough investigation into these subjects will reveal a wide range of compositional, recording and technological methods that we can emulate in our own productions. Armed with all this knowledge, we can take a variety of today's tools and make them sound near enough identical to those of yesteryear.



© Redferns

Primitive beats

The sound of the venerable Roland TR-808 and TR-909 have become part and parcel of modern genres. However, history is littered with other beatboxes that instantly encourage that retro vibe. The earliest of these were preset accompaniment devices, such as the proto-Roland Rhythm Ace, or the Korg Minipops series. These used purely analogue technology to create their percussive tones, which sounded absolutely nothing like the real drums they were trying to replicate, plus they had little or no pattern editing. This changed with Roland's CR-78. It was still an analogue instrument, but it offered some programmability - you could

create patterns, mute sounds and mix in a bit of metallic ring modulation. Roxy Music, Gary Numan and, most famously, Phil Collins used it.

It's easy to resurrect the retro rhythms produced by such boxes, thanks to a wealth of free and commercial plug-ins. The likes of Waldorf's Attack, Sonic Charge's μ Tonic and D16 Group's various drum machines generate incredibly convincing analogue drum sounds with step sequencers modelled on their ancestors.

They might be desirable and characterful today, but back in the 70s, analogue drum machines were simply a poor substitute for real



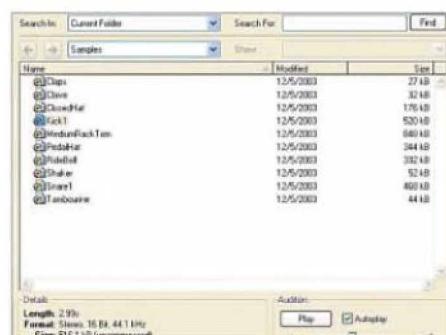
Our very own CM-505 (in the CM Studio folder on the DVD) does a great job of emulating old-school drum machines

drums. Fortunately, a man by the name of Roger Linn combined pattern sequencing with 8-bit samples of actual drums in the Linn LM-1, which was used across a wide selection of genres.

The key to capturing the vibe of these machines is to use a limited

number of samples at low sample rates, and no velocity modulation. You could roll your own kits or pick through the countless samples available online. Sounds from just about every drum machine are out there, waiting to be dragged into your sampler of choice.

> Step by step Vintage beatbox sounds



1 > Let's recreate the sort of drum kit sound that was popular in the 80s. Back then, 8-bit sampled drums ruled the radio, thanks to machines like the Linn LM-1, E-MU Drumulator and Oberheim DMX. We can create a very similar sounding kit using any software drum machine or sampler. We're using Reason for our example, but anything will do.

2 > Since we're using Reason, we'll obviously want to take advantage of its excellent ReDrum device. It has many of the tools we need to create a retro sampled drum sound. We've collected a few acoustic drum samples for you to work with - they're on the disc. Load **Kick1.wav** into the first slot.

3 > Our kick is far lengthier and more detailed than the reduced memory of old drum machines would allow. Turn the **Length** knob down to around 10 o'clock and play the sound. That's more like it. Another feature of the old drum machines was their ability to change pitch. Let's crank our kick slot's **Pitch** knob nearly all the way down.



4 > Play the sound. Now we're getting somewhere! Set the **Velocity** to 12 o'clock - we don't want any velocity modulation at all here. Next, load in more samples from the coverdisc. Edit their **Lengths**, tweak their **Pitches** and kill the **Velocity** for each of them. When you're finished, you should have a complete kit with ten sounds in all. We've saved ours as **8bitKit**. But wait, there's more!

5 > Even with all of our editing, our drum kit still sounds a bit too clean and modern. Let's take care of that with a bit of tape distortion, which we can get from Reason's Scream4 effect device. Use the **Tape** setting and reduce the **Speed** and **Damage Control** parameters. Increase the **Compression** a touch and give the **Lo** slider a boost in the **Cut** section. You'll also probably want to adjust the **Master** gain.

6 > For a truly over-the-top 80s sound, you can sling it all through a gated reverb effect. Remember to keep the **Release** time short and adjust the **Dry/Wet** mix to taste. If you want to hear what it should sound like, take a listen to our audio example, **VintageDrumLoop.wav**, which you can find on the **CM** disc.



Digging the relics

Music technology advances at an incredible pace. As a result, today's cutting-edge sound is rapidly superseded by tomorrow's, leaving yesterday's gear to collect dust and embarrassed glances from those who made their names with it. It wasn't that long ago that analogue synthesisers were seen as passé by modern musicians, ditched in favour of shiny 16-voice digital synths and samplers. However, something strange happened a few years ago. Up-and-coming musicians were drawn to those old boxes, due partly to their then-low second hand prices, and partly because they had an immediacy not found in modern, menu-laden digital, do-it-all instruments. More importantly, that old gear had a wicked vibe and a sound that stood out, just as it did when it was new.

We needn't tell you that analogue synths are more popular now than ever before. From Arturia's Moog Modular V to GMedia's Oddity, the sound of the control voltage synth is alive and well. A fair number of our own CM Studio synths draw upon those instruments for inspiration, as well.

Yet synths weren't the only keyboards available to the musicians of the past. In fact, many saw synths as supplemental to a rig that also included electric pianos, transistor and tone-wheel organs, clavinet

and even pianos.

Most of these instruments are less wieldy than even the burliest synthesiser, so it's a good job they've been replaced by software. Applied Acoustics Systems' remarkable Lounge Lizard does a fine line in electric pianos, though you can turn to a number of sample libraries for your Rhodes and Wurlies needs. String synths are also out there, some commercial (GForce's Virtual String Machine), and others, like the ever-popular Cheeze Machine, free.

Organs, too, have been modelled. Native Instrument's B4 is probably the king of the cabinets, though there are some nifty alternatives, including LinPlug's Organ 3 and the nifty ComboSister from NUSofting. This last entry is patterned after those wheezy, cheesy transistor organs loved by psyche and new wave musicians alike. If you're channelling early Pink Floyd or Blondie's Jimmy Destri, this would be an excellent choice.

If you're looking for something with a bit of soul, you'll probably need a Clavinet. Luckily, these simple instruments are easy to emulate with nearly any synthesiser (a bit



XILS-Lab recently released an excellent emulation of the esoteric EMS VCS3, with all of the fun but none of the hassles of the original

of filtering, non-existent attack and release times), but alternatively, you could just grab Big Tick's Ticky Clav from bigtick.pastnotecut.org/index.php.

For those wanting to go way back to mid-60s prog rock or Virgin-era Tangerine Dream, Mellotron sounds are a must. You could hardly find a lower-tech instrument than the Mellotron, with its racks full of tapes (one for each key) and eight-second playback times. Yet it was a key instrument in its day and helped to significantly shape early electronic rock. You can find samples of those famous choirs, strings and flutes, or you can go for a copy of GMedia's awesome M-Tron and its associated tape banks.



Some of the classic synthesisers of the past, such as the Moog Minimoog (left), ARP Odyssey (middle) and Sequential Circuits Prophet-5 (right), are now highly sought-after units that some software developers have emulated with stunningly accurate results

> Step by step Vintage electric piano effects



1 > Though electric pianos are easily found in virtual form, they don't always conjure that vintage sound. That's because those artists from the 60s often added effects to their Rhodes and Wurlies. Load a suitable Rhodes emulation in your host DAW. We're using the 4Front Rhode in energyXT2.5 Core CM Edition.



2 > It was The Beatles who first came up with the idea of running sounds other than a Hammond Organ through a Leslie rotary speaker. It worked great on guitars, vocals and electric pianos. You can get the same effect using Betabugs' Spinbug (www.betabugsaudio.com) and it won't cost you a penny. Stick it on an Insert.



3 > Let's take things a step further by sticking a tape delay plug-in, such as the GSI WatKat used here, on an effects Send and plumbing our sound through it. For the total *One of These Days* Pink Floyd experience, record your performance and reverse the reverb leading up to the attack of the piano sound. So psychedelic!

Instruments of mass degradation

It'd be all too easy to believe that analogue synths and drum machines are the only vintage instruments worth talking about. However, electronic music didn't stop with the introduction of the digital synthesiser. On the contrary, it blossomed. After more than a decade of cranky old Moogs and ARPs, and a steady diet of simple saw, square and sine waves, musicians were more than ready for the digital revolution. Digital synthesisers offered more complex and interesting waveforms, rock-solid tuning, preset storage and, eventually, intercommunication via MIDI.

Yet early digital synths were every bit as characterful as their analogue counterparts. It might have been difficult to tell whether a given synth solo had been played on a Prophet-5 or a Roland Jupiter-8, but no one was going to confuse a Fairlight for a DX7.

The Yamaha DX7 was the driving force behind the market, with its unique take on FM synthesis. The airwaves were rife with its bells, electric pianos and round, rubbery fretless basses. It had a sound all its own, and one that faded as quickly as it came.

The same is true for the German PPG Wave. The first successful wavetable synthesiser, it was big, brash and bold. Grainy, gritty 8-bit pads and spiky digital basses were its strongest points, and its

The digital revolution was often defined by the rich and famous, since only they could afford such a thing as a PPG, which was downright cheap compared to the Fairlight CMI and New England Digital Synclavier. The CMI helped shape the sound of the 80s, with its immediately recognisable low-res samples, including the all-too-familiar shakuhachi and orchestra hits. Could prog rockers Yes have survived the new wave without the Fairlight-heavy hit *Owner of a Lonely Heart*? It's hard to say.

Eventually more affordable options came along for the gigging muso. Ensoniq brought sampling to the masses with the Mirage, an 8-bit grungepuppy that came in at under two grand. They did the same for wavetable synthesis with the awesome ESQ-1. Like the PPG, both of these instruments sent their digital waves through analogue filters and VCAs for a sound that's ultra-chic among today's pundits. Few software developers have

pursued Ensoniq's templates, but there is a great Mirage emulation in the form of 112dB Software's Morgana (112db.com), and a free ESQ-1/SQ-80 emulation from Siegfried Kullman (www.buchty.net/ensoniq).

However, with a bit of trickery, many a



The big, bold and beautifully blue PPG Wave has been recreated in software by master synth makers, Waldorf

sample can be made to sound as if it were spat from one of the above boxes. Bit reduction is the key to those old-school sampler and wavetable synth sounds. There are loads of bit reduction plug-ins out there and, in fact, most samplers have them built right in. However, you could just record your samples at a lower sample rate and resolution to begin with. For a truly authentic sample, keep it very short and obviously looped. The more aliasing, the better. Don't bother with multisampling – few vintage samplers offered much support for that, and those that did ran out of memory before too many samples could be piled on. Tie your filter cutoff to velocity and use that to vary the sound at different velocities. For a vintage industrial vibe, sample some *Hellraiser* and *Evil Dead* movie dialogue snippets through a television or computer speaker.

"The airwaves were rife with its bells, electric pianos and round, rubbery fretless basses"

legacy lives on in instruments like Waldorf's Largo and a pair of PPG-alike soft synths, one from Waldorf (part of the Waldorf Bundle) and one from PPG aficionado Hermann Seib (WaveSim, available free from www.hermannseib.com).

> Step by step Sampler accuracy with Morgana



1 > While expensive samplers rocked pro studios, Ensoniq's Mirage was the favoured box for the average gigging musician. 112dB software have done a fine job of dragging the Mirage into the modern world with Morgana. Let's have a look. Load it up in your host of choice.

2 > This has a much easier interface than its inspiration's two-digit hexadecimal display. Click the **Load** button and find the sample called **CR_1001.aif**. If possible, listen to it unaffected in your browser, before loading it up. When you have an idea of what it sounds like, pull it into Morgana and click the **Loop** button.

3 > Play the sample at the root note shown on the keyboard (G[#]2). It's already sounding different. Set the filter (VCF) **Cutoff** and **Resonance** to 10 o'clock. Tweak the Amplitude and Filter envelopes' **Release** times and play the sample in different octaves to hear how Morgana's transposition affects the loop.

Giant steps

Early sequencers were voltage-controlled affairs, offering between eight and 24 steps. If you wanted to program a series of notes, you had to meticulously tune each step with a knob. It was a painstaking process and, as analogue equipment was unstable at the best of times, it could be a very frustrating chore.

Still, in the hands of a skilled player, the

analogue sequencer could be an inspirational accompanist. Seminal synthesists such as Klaus Schulze and Michael Hoenig used these devices as launch pads for whirlwind flights of fancy, and modern analogue masters like Cybertron are squeezing ever more from today's analogue sequencers.

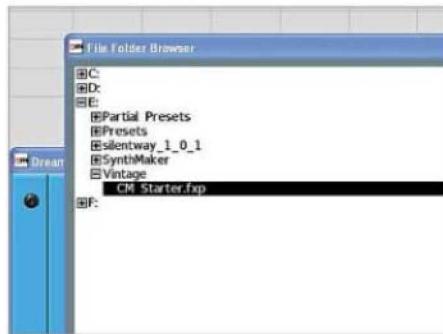
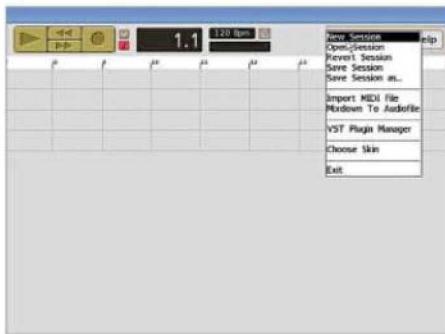
There are a good number of software

sequencers based on their analogue ancestors. The free Dream Sequencer from Dream Vortex Studio (www.dreamvortex.co.uk) is a faithful recreation of a vintage analogue sequencer, while Five12's Numerology (www.five12.com) for Mac takes the concept and runs with it.

Simple or complex, the analogue sequencer (and its emulations) can spark your creativity.

> Step by step

Analogue sequencing



1 > Analogue sequencers play a major role in many vintage recordings, including the bombastic prog rock songs of Emerson, Lake and Palmer. We can recapture some of the same inspiration in software form, so fire up your favourite VST host - we're using CMusic.

2 > We're going to employ Dream Vortex Studio's analogue-style Dream Sequencer, which is clearly based on old Moog and ARP hardware. Open it in your host and call up the **CM Starter.fxp** patch. This is essentially an initialised patch - hold a note to hear how it sounds.



3 > Note the row of eight knobs across the top of the GUI, which individually control the pitch of the sequenced notes. Try holding down a note on your controller and changing the knob values to create a more interesting pattern. Copy our settings to get started.

4 > The pattern is becoming more interesting, but the sound itself isn't. The built-in analogue-style synthesiser is controlled with the knobs across the bottom half. Try reducing the **Cutoff** and bumping up the **Q**, then increase the value of the **Filter Mod** for cooler tones.

5 > Hold a note on your keyboard and click the **Slide** and **Rest** buttons. The former controls the portamento between notes, while the latter inserts gaps. It can be great fun switching them on/off in real time. When you have a pattern you like, save it. Ours is called **CM Starter2**.

► SEQUENCE YOUR IDEAS



THESYS

"THESYS is a powerful sequencer plugin that offers a world of inspiring possibilities for creating breathtaking music. THESYS generates chords, scales, rolls, pitch bends, and more. Plus, use the Action Section to mangle your patterns in real time, using any MIDI controller. THESYS squeezes fresh new sounds out of your MIDI-compatible software OR hardware."

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THESYS is available for AU and VST on Mac and PC and you get it from:
www.sugar-bytes.com

PURELY MADE OF PASSION

SUGAR BYTES

Computer music back in the day

Not all vintage production tools are of the analogue or even solid state persuasion. Though ancient hardware step sequencers and beatboxes provided much of the soundtrack of yore, many classic songs were composed with computers. Erasure's Vince Clark preferred the timing of his battered old BBC Micro to any MIDI machine, and the venerable Atari ST is still sought after for its built-in MIDI ports and rock-solid timing. Mac users can take some pride in the fact that Apple computers have been used for music creation since the very earliest models.

Interestingly, many of the applications developed for these

old machines tended towards the experimental and unusual. In fact, Digidesign themselves offered a number of intriguing early synthesis and sampling tools, such as Turbosynth, that set the stage (and created the blueprint) for modular environments like Reaktor, SynthEdit and Kyma.

Other companies like Dr T's and Intelligent Music offered programs built to enhance the interaction between composer and computer, with algorithmic apps such as Music Mouse and KCS. Many of these pieces of software were cross-platform, running happily on Macs and Atari computers.

Thanks to diligent support from

enthusiasts such as the late Tim Conrardy and the generosity of many developers, many Atari programs have been released for free to those who wish to continue using their old 1040 and Mega-ST boxes. In fact, you can still avail yourself of the experience even if you don't own an Atari, thanks to emulator programs such as the STEem Engine, which wraps up Atari apps so that they can be used on your PC.

If you'd like to relive the early days of home computer music, all



The STEem Engine enables PC users to run old Atari software on any Windows PC

you need do is head over to tamw.atari-users.net, download any software you want and follow the instructions to run it under Windows. You might well, as many before you have, find new inspiration from these old tools.

> Step by step

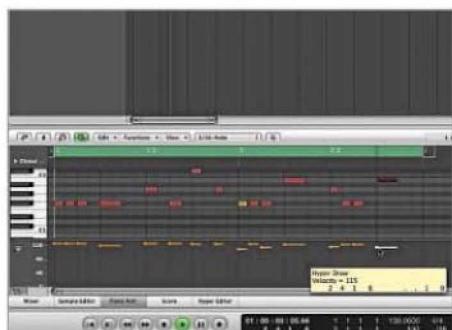
More sounds and sequencing



1 > Early MIDI and digital sequencers, like Oberheim's DSX, were primitive, to say the least, and the music made with them had a special (some would say lifeless) sound. To recreate it, we'll start with our vintage drum kit (this time using Ultrabeat in Logic, although you can use whatever host you like), and a simple, ultra-quantised beat. Note the rapid-fire kick drums.

2 > We've copied our pattern a couple of times and looped playback to make working a little easier. Drum machines like the Linn and Oberheim were based on patterns, which were arranged into songs. They also lacked any sort of velocity control, so if your drum machine has any velocity modulation, you'll want to defeat it or crank all the velocities up, as we're doing here.

3 > While your first impulse might be to use analogue sounds, a harsh digital bass will date your track (in a good way!). There's no better digital bass than that of the PPG Wave. You can use one of the PPG clones or program a reproduction in another wavetable synth, like the Waldorf Largo that we're using, which contains PPG wavetables. You can find our sound on the **cm** DVD – it's called **PPGish**.



4 > Here, we've created a bass pattern straight out of the new wave. We've quantised it pretty heavily to give it a clinical 80s flavour. Like many digital synths of the day, the original PPG had both velocity and aftertouch onboard, so don't be afraid to use one or both of them. We don't mind a bit of velocity modulation, but we do tame our velocity levels a bit in Logic's Hyper Editor.

5 > Let's add a bit of frantic sequencing with an analogue synth typical of the era. TAL-Bassline closely resembles the Roland SH-101. Beginning with the **Start Here** patch, set the **VCA** to **Env** and create a very short envelope. Once you're happy (AU users can load **CMSeq**), write a sequence like this one using step entry or the piano roll. It needs to be heavily quantised, and don't spare the 16th notes.

6 > Finally, add some dark polysynth strings, with AlphaCM (on the DVD). Remember that track counts were far lower in those days, even with MIDI, so you'll want to keep it locked in tight, with little expression or nuance. As shown, the electronic music of the 80s was far more regimented than that of the previous decade and, because of the limitations of the old gear, today.

Retro recording

The technology of recording advances almost as quickly as that of electronic music instruments. In relatively recent memory, we've watched as four-track magnetic tape recording gave way to eight tracks, 24 tracks, and beyond, before being supplanted first by digital tape, then the hard disk. Once the domain of costly commercial studios, high quality digital recording and editing is now accessible to anyone with a home computer.

It goes without saying that much of the vintage sound can be found in the studio equipment prevalent at the time a given recording was made. That's why old tube/solid-state compressors and EQs are highly prized by audiophiles, as are early mixers and tape devices.

Why are these things so desirable? Well, just as analogue synthesisers each had their own character, analogue mixers and tape decks each imparted their unique sound to tracks made with them. Tape is a forgiving medium in many ways - you can throw a hard signal at a tape, and if it overloads, it'll compress and distort in a pleasing manner. Digital recorders, on the other hand, distort unpleasantly. Plus, tape rolls off the highs in a way that sounds warm and familiar.

"Tape is a forgiving medium in many ways - it'll compress and distort in a pleasing manner"

You can, of course, achieve the same effects with software. There are no shortage of tape saturation and compression plug-ins available. You can even get a plug-in that simulates the sound of tape decks skidding to a halt. However, don't overlook bouncing your mix to an actual cassette or reel-to-reel deck from some true tape degradation.

Use your ears rather than your eyes - devices like Frontier Designs' Tranzport enable you to work without looking at your monitor



Some of the most important aspects of tape recording are easy to emulate. You can impose a limited track count, say, to get your creative juices flowing. And of course, tape is not a visual medium - you can't see your verses and choruses laid out across a

screen as you do when using a DAW, which has a considerable impact on the way we work. Tape makes you listen. Try shutting off your monitor, or putting it out of view when tracking (and mixing). If you have a MIDI transport controller,

use that instead of the mouse.

Sync and tempo are also key factors in the analogue sound. Tape decks exhibited all manner of time slippage - tape is flexible to a point and motors are, after all, mechanical. If you were to take any tape and record a strict, steady click track onto it, it would never play back in precisely the

same way. The variations are minute and subtle, but they are there. It's easy to write tiny tempo fluctuations into a DAW with a dedicated tempo track. This can do wonders to liven up a static recording.

We've already said that much old music was played and recorded manually. It wasn't easy to cut and paste together the best bits on tape with razor blades and splicing tape. These days, it's all too easy to copy the same chorus three or four times across an arrangement, and just as simple to weed out any mistakes. However, an accidental misstep often turns out to be a significant point of interest upon reflection. A good producer knows when to leave the mistakes in and when to get rid of them, and this was especially important in the days when tape and time were very costly commodities. You can easily adapt these older methods to your modern recordings. It might be harder work, but it'll give you a much more lively sound for your efforts.

> Step by step

Tape effects



1 > We don't need a reel-to-reel machine to reap the benefits of using tape. There are lots of tape saturation plug-ins available. Let's use one to impart some magnetic mojo to a track. Start by importing a short clip - we're using a bit of audio we mixed from the exercise on the previous page called **EightiesStyle.aif**.

2 > Listen to the clip to hear how it sounds unaffected (try your own clip if you want). It might be best to **Loop** your sequencer's playback while you work. Now, let's call up a tape sim plug-in on our mixer's effect insert. Jeroen Breebaart's Ferox (www.jeroenbreebaart.com) is a great tape simulator effect.

3 > Check out the effects of the **Feedback**, **Saturation** and **Noise** knobs. Adjust them to taste, but be careful - a little tape saturation goes a long way. Ferox sounds great and is absolutely free. Considering the cost of tape reels these days, that makes it downright essential, if you ask us!



Pause and effect

Even the most expensive vintage synths only produced relatively simple waveforms when compared to traditional instruments, so the savvy electronic muso sweetened their sound with effects. These are familiar to us still: compression, distortion, reverb, delay, chorus, phasing and so on. However, vintage effects were less precise and sophisticated than today's. They offered far less control and fewer features, often derived from primitive techniques. For instance, reverb was usually generated by a spring or plate, and sometimes a chamber. Delays, phasing and chorusing were created using tape echo devices or multiple tape



You can get a spot-on reproduction of Lexicon's famous digital delay courtesy of PSP Audioware

decks. Distortion was often created by overdriving a cabinet, though there were many early distortion stompboxes about, too.

Vintage effects pedals and racks have gained an air of mystique in recent years - tape delays and plate reverbs trade for vastly inflated sums, if you can find them for sale. Luckily, delay effects were among the first to grace the virtual studio, and there are a staggering number of them about, both free and

commercial. You can use any old delay to simulate tape echo effects - just remember to filter out the highs with each repeat, and don't synchronise it to host tempo. Use your ears. Turn the knob until it sounds right. That goes for phasers, flangers and LFOs, too.

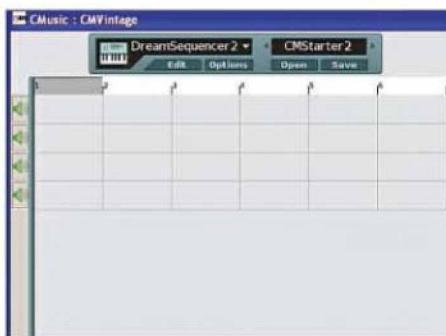
Spring reverbs are a little harder to come by, but there's one in the CM Studio called PSP SpringVerb that won't cost you a penny.

For the 80s retroist, there are

quite a few emulations, including PSP Audioware's excellent copies of Lexicon's famous delay modules, while Audio Damage tapped the famous Eventide Clockworks Harmonizer for their brilliant Discord plug-in.

As for vintage tube and solid state compressors and limiters, emulations from Universal Audio and Waves have brought some of the character of those effects into the virtual studio. CM

> Step by step Classic echoes



1 > Remember the sequence we created back on p31? It sounded suitably analogue but fell ever-so-slightly short of the sequences of the 70s. It was lacking a key ingredient: tape echo. Tape delayed echoes were an integral part of the electronic music of the past. We'll show you what we mean. Call up your Dream Sequencer and load the preset we made previously.

2 > Have a play to familiarise yourself with the sound, then open your DAW's mixer so that you can add some effects. We're going to drop in a tape delay emulator. This one is from E-Phonic (e-phonic.com) and is called, appropriately enough, Tape Delay. If you're using CMusic, as we are, you'll need to expand your mixer channel to access the button that opens the plug-in's editor.

3 > Trigger your sequencer pattern to hear the echo. Normally, we'd use a plug-in's built-in sync-to-host function to determine the delay time setting, but in keeping with the spirit of this feature, we're going to tune it by ear. Our particular project is playing back at 120bpm, but that hardly matters. Just turn the **Delay Time** knob until it sounds right. We've set ours to around the **40** mark.

POWER TIP

> Convolution 'verb

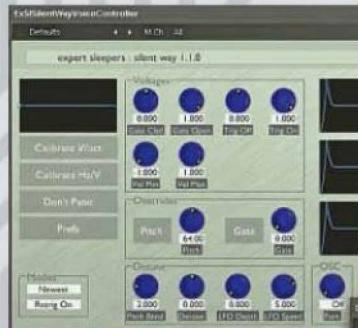
Convolution processors aren't just for reverb - they're great for recreating vintage equipment. They work by sampling the effect of a given space or device on an incoming signal (sometimes a loud transient, sometimes sweeping waves). This information can then be used to recreate the effect on the signal of your choice. Logic Pro's Space Designer comes to mind, as does the excellent Nebula (www.acusticaudio.net). There are free and commercial versions, though the latter is unique in that its impulses can be adjusted in real time, thanks to an impulse capturing method that resembles multisampling. The free Nebula3 CM is on the DVD, so give it a whirl.



4 > E-Phonic's Tape Delay plugin has plenty of functions that can help us create a vintage vibe. Old tape machines were noisy, and this plug-in comes with a **Noise** function - turn it up for some grainy goodness. Adjust the **Dry/Wet** setting to just over half way (we've got ours on an Insert - if you're on a Send, you'll adjust the mix there). Set the **Feedback** to just under half way while you're at it.

5 > Finally, we can adjust the built-in low- and high-cut filters. Old tape units rolled off frequencies with each pass of the signal, creating a very characterful lo-fi sound. Adjust the **Low Cut** and **High Cut** parameters to thin out the echoes. When you've got something you like, save the patch. Ours - called **CMVintageDelay** - is on the disc.

> Step by step More effects



Analogue anachronism! Expert Sleepers Silent Way offers a suite of plug-ins that can be used to control your old analogue synths

1 > Let's check out some more ways in which plug-in effects can be used to enhance your retro sonics. Create a new project in your DAW and record a bit of your own speaking voice. If you're shy, you can use our sample provided on the **cm** DVD, called **Dialogue**.

2 > We're going for an old-school sample sound. First, play the raw recording back to familiarise yourself with its sound. Pretty clean, pretty cool, but also pretty modern sounding. Let's toss it down the time tunnel. We'll start by using a speaker simulator. There are lots to choose from. Since we're using Sonar here, we're going to use Cakewalk's Amp Sim, which comes bundled with the sequencer.



3 > Let's choose a solid state distortion, and a single speaker. Boost the **Drive** and reduce the **Low** and **High** frequencies using the built-in EQ. Crank the **Mid** slider way up, too. Fine tune everything until you have something that sounds like it's coming out of a small, cheap speaker. In fact, the closer you can come to the sound of a tiny television speaker, the more authentic it's going to be!

POWER TIP

> Mixer magic

Our super-powered DAWs enable us to niggle over every detail - eg, nudge each note into perfect pitch or automate gain stages and fades with incredible accuracy. This was not always the case. Mixing used to be a performance art. In the days before automation, it wasn't uncommon to see a studio's entire engineering staff huddled around a mixer, each controlling a group of faders, buttons and pots. If anyone screwed anything up, the tape was rolled back and the mix was started again from scratch. No two mixes were ever alike, and grease pencils were the only system of recall. Again, turn away from your monitor and try mixing without being able to see your track, using a MIDI controller alone.



4 > Since we're trying to impart the sound of a sample being recorded off of the TV, we could do with a bit of reverb. However, rather than simulate the room in which the sample was recorded, let's go totally retro and stuff the sound through a spring reverb, courtesy of the PSP SpringVerb which can be found in the **cm** Studio. Use a short **Time**, a bit of **Damping** and set the **Mix** heavy on the 'verb'.

5 > We need to use some bit-reduction to make our sample sound as if it was tracked with an ancient sampler. There are lots of bit-reduction tools available, but Jeroen Breebaart's TimeMachine is loaded with features designed to specifically emulate old samplers. Insert it, reduce the **Samplerate** and **Bit/sample** resolution, and boost the **Crosstalk** and **Aliasing** for some dirty neo-new wave!

Voltage voodoo

Owners of vintage analogue synths know how difficult it can be to integrate them into the modern DAW-based studio. The analogue heyday took place long before the advent of MIDI, and though they offered limited interconnectivity in the form of control voltage, gate and trigger I/O, there was no agreement between manufacturers regarding this interfacing. Some scaled their voltages based on volts per octave, while others used a volts/Hertz design.

We don't have to tell you how difficult it is to get analogue synths playing nicely with MIDI-centric digital gear. Hardware solutions have been presented in the form of MIDI-to-CV converters, but these often cost as much as a synth.

Luckily, some clever software developers have come up with solutions. MOTU got the ball rolling with Volta, a Mac AU plug-in that makes use of the I/O jacks of certain audio interfaces. MIDI notes and control data are converted by Volta into voltages that are sent out of the interface's outputs, while incoming signals are monitored for precise tuning and scaling. It's a great idea and one that works quite well in practice, although it isn't available to Windows or VST users.

Expert Sleepers offer an alternative for Windows and Mac. Silent Way provides MIDI to CV conversion in much the same fashion as Volta in VST and AU formats. It's also a lot cheaper at \$49. Again, it requires specific interfaces (those from MOTU and Alesis are known to work). Silent Way offers an ever-growing feature set, including envelope generators, LFOs and more. We've used it with both modern and vintage analogue gear, including a Moog Minimoog, ARP Odyssey, Synthesizers.com modular and even an old EMS VCS3, all with excellent results.

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DVD contents Full software

Full software

Intelligent Devices
MegaDelayMassCM (PC/Mac)
Togu Audio Line
TAL-Reverb (PC/Mac)
Vember Audio shortcircuit (PC)
Meatscience Bitsmacker (Mac)

Demo software

Propellerhead Record (PC/Mac)
112dB Redline Equalizer (PC/Mac)
Audjoo Helix (PC/Mac)
Image-Line FL Studio 9 (PC)
Intelligent Devices
Marshall Time Modulator (PC/Mac)
Intelligent Devices
MegaDelayMass (PC/Mac)
Intelligent Devices
Slip-N-Slide (PC/Mac)
SoniqWare MT-1 (PC)
XILS-lab XILS 3 (PC/Mac)

Tutorial files

cm Focus
Easy Guide
FL Studio 9
Guitar Lab
Into the Groove
MegaDelayMassCM
Off the Dial
Q&A
Vintage Sounds
Synth Essentials
Totally Trackers

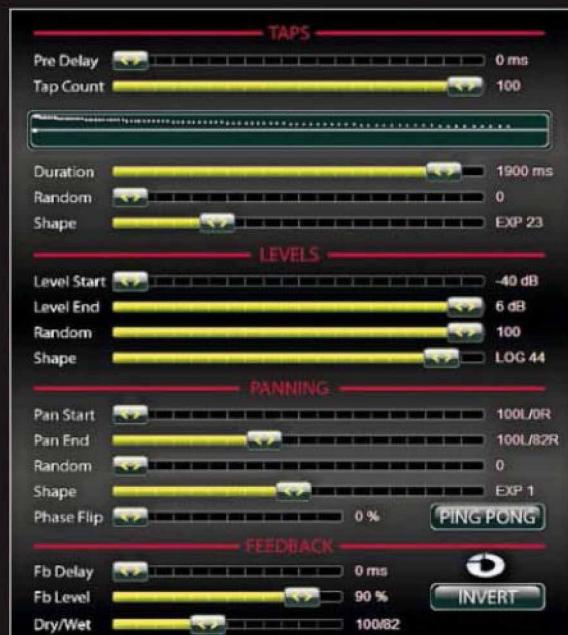
Samples

The cm Guitar Collection 2009:
1954 24-Bit samples

Reader Music

DJ RoknRob Lectric Latino
- Burnt Henry/Wonder Why
Innovation of Sound - Fluid
Josh Liebe - Eye of The Storm
Noisy Toyz - Feeling Lost

INTELLIGENT DEVICES MEGADELAYMASSCM (PC/MAC)



The crazy delay plug-in is exclusive to *Computer Music*, and will twist your sounds inside out with its plethora of parameters and up to 100 taps. Turn to the tutorial over the page for our step-by-step guide to installing and using this excellent effect.

System requirements

PC VST host
Mac VST host
Web www.intdevices.com

Intelligent Devices' mind-bending delay is yours for now!

TOGU AUDIO LINE TAL-REVERB (PC/MAC)

A simple but effective reverb plug-in from Togu Audio Line for creating great-sounding ambience quickly and easily.

System requirements

PC VST host
Mac AU/VST host
Web kunz.corrupt.ch



TAL-Reverb may have simple controls, but it sounds awesome

Mac AU host
Web www.meatscience.net

MEATSCIENCE BITSMACKER (MAC)

A slice of lo-fi loveliness that'll crust up your sounds nicely with its sample-rate and bit-depth reducing capabilities.

System requirements

shortcircuit is elegantly designed and absolutely packed with useful features and modulation options.

System requirements

PC CPU with SSE support,
Windows 2000, VST host
Web www.vemberaudio.se

VEMBER AUDIO SHORTCIRCUIT (PC)

One of the best software samplers around, commercial or otherwise,

PROFESSIONAL
AUDIO PRODUCTS



Demo software

PROPELLERHEAD RECORD (PC/MAC)

From the creators of Reason, this all-in-one recording solution is all you need to make your multitrack masterpiece. The demo can't open song files, but all other features are available.

System requirements

PC 2GHz CPU, 1GB RAM,

Windows XP

Mac Intel CPU, 1GB RAM, OS X 10.4

Web www.propellerheads.se

occasionally plays random pitches and outputs noise.
System requirements

PC Windows XP, VST host

Mac OS X 10.4, AU/VST host

Web www.audjoo.com

112DB REDLINE EQUALIZER (PC/MAC)

A versatile EQ with precision control and variable phase shifting. The demo works for 60 days with the license included in the installer.

System requirements

PC 800MHz CPU, 256MB RAM,

Windows 2000, RTAS/VST host

Mac 1.2GHz CPU, 256MB RAM,

OS X 10.4, AU/RTAS/VST host

Web www.112db.com

INTELLIGENT DEVICES EFFECTS (PC/MAC)

Marshall Time Modulator, MegaDelayMass and Slip-N-Slide are just the ticket for creating abstract sounds and weird effects. The demos require PACE drivers and expire after eight days.

System requirements

PC VST host

Mac VST host

Web www.intdevices.com

SONIQWARE MT-1 (PC)

A stereo multiband transient processor, MT-1 will put the smack back in your track. The demo has limited functionality and can only be used for 30 minutes at a time.

System requirements

PC VST host

Web www.soniqware.com

XILS-LAB XILS 3 (PC/MAC)

Based on classic modular analogue synths, XILS 3 has a gorgeous warm sound and plenty of potential for experimentation. The demo outputs silence occasionally, is save-disabled and can't be automated.

System requirements

PC RTAS/VST host

Mac AU/RTAS/VST host

Web www.xils-lab.com

IMAGE-LINE FL STUDIO 9 (PC)

The latest version of FL Studio includes new instruments and effects, sidechain routing and dozens of minor improvements. The demo is save-disabled.

System requirements

PC 2GHz CPU, 512MB RAM,

Windows 2000

Web www.image-line.com

AUDJOO HELIX (PC/MAC)

A superb synth that utilises a variety of synthesis methods. The demo is save-disabled and

PROGRAMS & PLUG-INS

Most of the programs on the DVD-ROM are presented as installers - simply double-click the installer icon and the application does the rest. However, plug-ins are often presented as .dll (PC), .vst or .component (Mac) files. To 'plug' the plug-in into your VST/AU host, just copy the plug-in file into your VST or AU plug-ins folder, as appropriate.

SAMPLES

Every month we give you a wealth of royalty-free samples! You can use them in your music in any way you see fit, without having to pay a penny, even if you end up commercially releasing your work. The only thing you *can't* do is redistribute them as samples - e.g. by making a sample CD with them. To install our samples, simply copy them to your hard drive.

USING THE DVD INTERFACE

- Put the DVD-ROM in your DVD drive, let it spin up, and wait for the interface to appear. If it doesn't autorun, browse to it in Explorer/Finder and double-click **Computer Music for OS X** or **PC**, as appropriate. Read the disclaimer and click **Accept** when you're done.
- The main interface will open. Mouse over the links for each section to get a brief description of their contents, and click on your button of choice - in our case, **Software**.
- An Explorer/Finder window will open, showing you the contents of that folder. Any executable files can be run directly from the DVD by double-clicking them. Demos are generally presented as installer applications, but check any Readme text files for additional installation information.

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- DJ and production duo, Jon Carter and Alex Blanco



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PC MAC

MegaDelayMassCM



This powerful multi-tap delay plug-in can generate anything from crazy feedback delay lines to lush reverb-style effects. Here's the full SP...

> This month's stunning free software give-away is a plug-in from Intelligent Devices, the developers of effects such as Slip-N-Slide and The Time Modulator. MegaDelayMassCM is a special version of their MegaDelayMass, serving as a mono multitap delay. However, this processor is no ordinary echo unit

- it's a versatile beast that's capable of traditional feedback delay effects, as well as room-style reverb, thanks to its huge number of available taps or delay lines. MegaDelayMassCM can handle up to a hundred taps, which can be tweaked with its easy-to-use controls - don't worry, you don't have to individually adjust the

settings for each one! Here, we'll show you how to install, authorise and use MegaDelayMassCM. Although the effect is mono-only, it's possible to use the plug-in to create stereo effects by duplicating your tracks and processing the left and right sides independently. However, a much more convenient solution is

to check out the stereo version at www.intelligentdevices.com, where you can pick up the entire MegaDelayMass package, including the stereo version, for a wallet friendly \$49. And if you'd like to try before you buy, you'll find demo versions of all the Intelligent Devices effects on the cm DVD in the **Software** folder.cm

PRE DELAY AND TAP COUNT
Set the amount of time before the delay kicks in and the number of taps

DURATION, RANDOM AND SHAPE
Control how long the taps last, and how they're positioned

RANDOM AND SHAPE CONTROLS
Control the random factor and shape of the volume curve

FEEDBACK DELAY AND LEVEL
Create long, intense effects with higher feedback levels - the Fb Delay slider controls how long it takes the feedback to kick in

TAPS
Pre Delay: 0 ms
Tap Count: 100

LEVELS
Duration: 1900 ms
Random: 0
Shape: EXP 23
Level Start: -40 dB
Level End: 6 dB
Random: 100
Shape: LOG 44

PANNING
Pan Start: 100L/0R
Pan End: 100L/82R
Random: 0
Shape: EXP 1
Phase Flip: 0 %

FEEDBACK
Fb Delay: 0 ms
Fb Level: 90 %
Dry/Wet: 100/82

INVERT

GRAPHICAL DISPLAY
A visual representation of the level and timing of each tap

LEVEL START AND END VALUES
Set the volume levels at the start and end of the delay effect

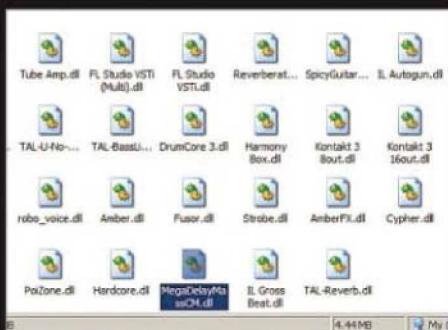
PANNING CONTROLS
These aren't functional as MegaDelayMassCM is a mono-only effect

DRY / WET
Sets the relative level of the processed and unprocessed signals

INVERT
Inverts the phase of the feedback, which can come in handy when creating busier effects

> Step by step

Installing, authorising and using MegaDelayMassCM



1 > Start by copying the contents of the **Software\PC Software\Full Software\Intelligent Devices MDMCM or Software\Mac Software\Full Software\Intelligent Devices MDMCM** folder to your hard drive. PC users should then copy **MegaDelayMassCM.dll** to their shared plug-ins folder, as shown above, while Mac owners should run the **MegaDelayMassCMUK.mpkg** installer.

2 > Before using MegaDelayMassCM, we need to authorise it. Once it's been installed, run your host software - we're using energyXT 2.5 Core CM Edition, which you can find in the **CM Studio** folder on the DVD. If you're new to this, see the **Beginners Start Here** document in the **CM Studio\CM Studio Tutorials**. Upon loading your DAW, a screen will appear asking if you want to Try or Buy.

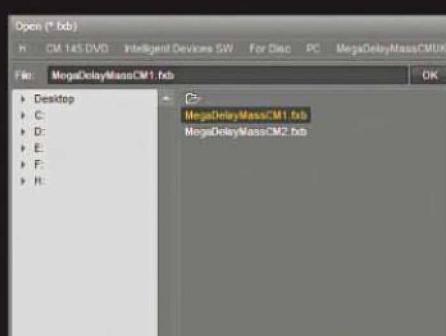
3 > Click **Buy** - don't worry, you're not actually going to pay anything - and fill out the information fields. On the next screen, click the **Save License Request** button and a **MegaDelayMassCM_1.ilr** file will be saved on your hard drive. Send this file as an attachment to **paceproaudio@intdevices.com** and a license file will be sent to your email.



4 > Once you've received your license, save it to your desktop and click the **Read License** button in the MDMCM installer. Navigate your way to the file and open it. MDMCM will now be authorised and can be used without limitation. Select the **Default** project, then copy **Clap.wav** from **Tutorial Files\MDMCM** onto your hard drive, and drag it into energyXT's Sequencer view, creating a new track.

5 > It's easy to add effects to an energyXT track - simply click the + icon in the Inserts section of the audio track's info panel, and pick **MegaDelayMassCM** from the list of available effects. To bring up the effect's interface, double-click **MegaDelayMassCM** in the Insert panel. Play back the project and you'll hear the clap, along with some rapid-fire delay effects courtesy of MDMCM.

6 > The easiest way to see what's possible with the effect is to try out some of the presets. To do this in energyXT, click the arrows to the right of the patch name field. Note that the preset names won't appear in energyXT, but they will show up in other hosts.



7 > As well as the main set of presets, you'll also find a bonus bank in the **MDMCM** folder. To open it, click the button with the little dots near the top left-hand corner of the MDMCM interface. Select **Open Bank...**, navigate to the **MDMCM/Banks** folder, and double-click **MegaDelayMassCM2.fxb**.

8 > This will load a selection of new presets. When you're done checking them out, load the original bank again using the **Open Bank...** function, and this time select **MegaDelayMassCM1.fxb**. Now we've tried out the presets, let's have a go at programming the thing ourselves.

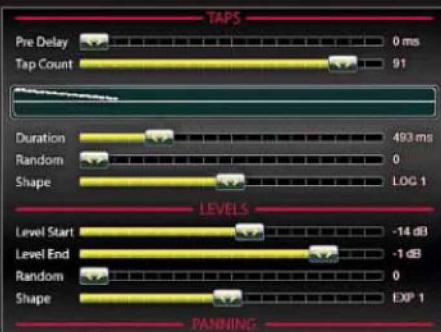
9 > Check out the Taps panel. The **Predelay** control sets how long the gap is between the original sound and the first delayed version. Turn it up to hear the difference it makes. When you're done, turn it back down to **0ms**.

> Step by step

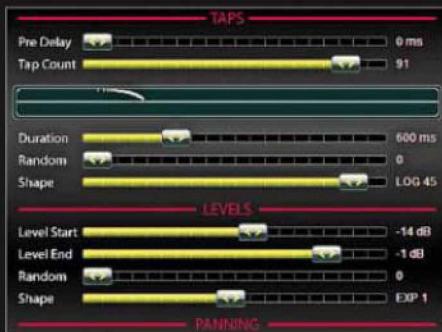
Installing, authorising and using MegaDelayMassCM, continued



10 > The **Tap Count** slider sets the number of delay taps. At the default setting of 8, the sound will be repeated eight times. Note that all these taps will occur within the **Duration** set by the next slider down. Therefore, higher values will result in a lot of taps being played back very quickly.



11 > As you increase the number of taps, more symbolic dots appear on the graphical display directly below the **Tap Count** slider. Create pitched effects by playing the taps back in quick succession - larger **Tap Count** values increase the pitch of the tone that is created.



12 > To create the most extreme effect, turn the **Tap Count** up to 100 and the **Duration** down. This can create some harsh, loud sounds, so you might want to turn your speaker volume down first. Set the **Duration** to 600ms and move the **Shape** control up and down to hear its effect on the frequency of the taps.



13 > We can also add a random element to the taps by turning up the **Random** slider. The higher this is set, the more irregularity will occur in the timing of the taps, resulting in a less consistent tone. This feature comes in handy for creating realistic, non-linear reverb effects.



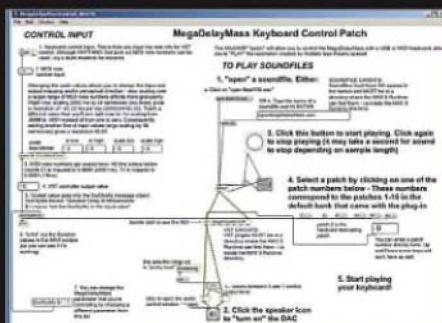
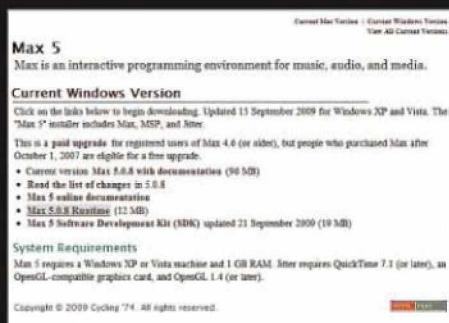
14 > The Levels panel controls the volume level of the taps throughout their duration. Traditionally a delay effect's taps will get quieter over time, creating a familiar tape-echo effect. With MDMCM, you can control the start and end levels of the taps. By setting the **Level End** higher than the **Level Start**, you can create weird reverse-style effects.



15 > The **Random** and **Shape** sliders work in the same way as the controls in the Taps section. The Feedback panel adjusts the **Feedback Delay** and **Level**, and this is also where you'll find the effect's **Dry/Wet** level for balancing the level of original and delayed signal.

> Step by step

Using the MDMCM Max Patch



1 > If you want to use MegaDelayMassCM in a live context, check out the included Max/MSP patch. To run it, you'll need to install the Max Runtime software, which can be downloaded from www.cycling74.com/downloads/max5.

2 > Copy **Beat105.wav** from the **Tutorial Files\MDMCM** folder on the disc into the Max Runtime directory on your computer. For PCs, this will be **Program Files\Cycling '74\Max Runtime 5.0**, and on a Mac, **Applications\Max5 Runtime**. Run the program and select **File>Open**. Go to **MDMCM\Max Patch** and open the file called **MDMCM.maxpat**.

3 > Once the patch has loaded, you'll be presented with this interface, which includes instructions on how to use the patch. There's more info in the **Max Patch/ReadMe** document. To access Max Runtime's MIDI options open **File>MIDI Setup**, and click the **Open** button by the speaker at the bottom of the interface for audio options.

>Royalty-free, pro-quality sounds

1954 samples

PC MAC

Our exclusive collection of guitar samples give you all the six-string loops, chords and multis you'll ever need!

1954 24-Bit CM Guitar Collection 2009

This month, it's just the axe, ma'am, as we give you nearly 2000 rocking guitar loops, chords and multisamples, all presented in pristine 24-bit WAV format.

Cyclick

Rockin' Robbie from Cyclick loves his guitar kit, and this month's samples gave him the perfect excuse to dust off some of his favourite classics, including a Trident MTA preamp/EQ, Royer R121 and Reslo ribbon mics, Gyraf Audio G9 preamp, modified DOD Supra-Distortion and a 1960s WEM Custom Copycat tap echo pedal. The resulting 1000 loops are simply oozing with analogue authenticity and will add a touch of class to any track you throw them at.

Groove Criminals

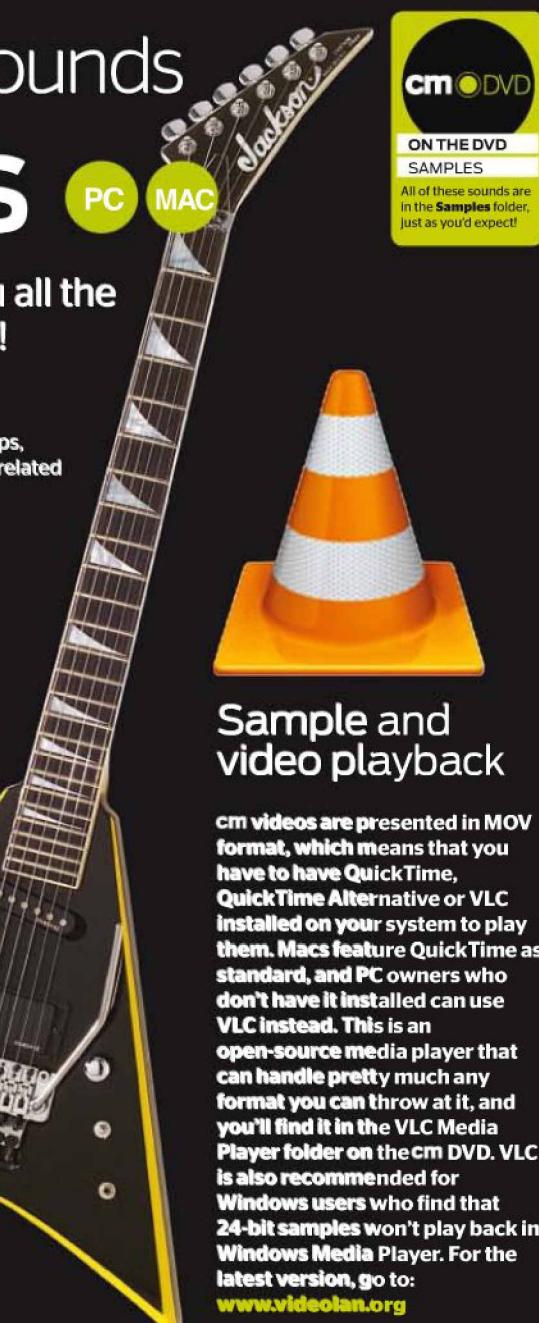
Banged up for life in the musical big house with no hope of parole, this month the Groove Criminals accepted their fate and got down to some good old-fashioned jailhouse rock. They must have some extremely understanding friends on the outside, because they managed to smuggle in numerous effects, including the DigiTech Talker, Barge Concepts feedback looper and Line 6 delay pedal. For more detailed

info on the creation of these luscious loops, chords and multisamples, check out the related post on the Groove Criminals' website.
www.groovecriminals.co.uk

rachMiel

The New York-based sonic wizard has used his uncanny powers to create a selection of freaky, far-out guitar sounds, including weird ring-modulated noises, dubby FX, and a batch of truly bonkers loops.
www.rachmiel.org

You don't have to be able to play guitar to kick out the jams - not now that you have just shy of 2000 exclusive six-string samples with which to get your tracks rocking



Producer Masterclass Video

Artist King Charles

His tunes are big and so is his hair. In this month's *Producer Masterclass*, trendy indie folkster King Charles shows us how he made his epic track *Love Lust*. Starting out at home, Charles demonstrates the techniques he used to create the demo version of the track in Logic Express; then he takes us to his label's studio, where the track is given a professional sheen in Pro Tools.

Web www.myspace.com/kingcharlesuk



HAVING PROBLEMS?

In the unlikely event that you have trouble with your disc, send an email to support@futurenet.co.uk and they'll help you out. Please do not phone us, as we don't give technical support over the telephone!

If you experience a problem with your software, you should first refer to the software manual. This is often delivered with the software itself or is sometimes placed on your hard drive when you run the installer. If you find that you don't understand some of the features of the software, remember to read the manual first. Should you be unfortunate enough to run into any technical difficulties with the software, it is often best to get in touch with the developer of that software - they are probably better-equipped to offer you the support you need than we are.

BROKEN DISCS: If your disc is corrupt, cracked or otherwise inoperable, we'll send you a spanking new replacement within 28 days. Send the DVD to: Disc Department, Reader Support, Future Publishing, CMU145/November/09, Bath BA1 2BW. And don't forget to include your full name and address!

cm STUDIO

Our ever-expanding suite of exclusive applications, virtual instruments and plug-in effects for Mac and PC!

APPLICATIONS

XT Software

energyXT2.5 Core CM (PC/Mac/Linux)
VST host and sequencer with modular routing

Outsim SynthMaker CM (PC)

Create your own VST synths and effects

MuTools CMusic (PC/Mac)

VST-compatible audio and MIDI sequencer

i3 DSP-Quattro CM (PPC Mac)

Powerful Mac audio editor and plug-in host

INSTRUMENTS

Sugar Bytes Artillery2 cm Edition (PC)

Multi-FX with internal sequencer

Ummet Ozcan Genesis CM (PC)

Another amazing virtual analogue synth



Muon CMplay (PC/Mac)

Powerful ROMpler instrument

Dominator (PC)

Virtual analogue synth with a classic feature set

u-he ZebraCM (PC/Mac)

Amazing virtual analogue synth

LinPlug AlphaCM (PC/Mac)

Subtractive synth with ring and amp modulation

Homegrown Sounds Astralis CM (PC)

Modulation-heavy 'soundscape' synth



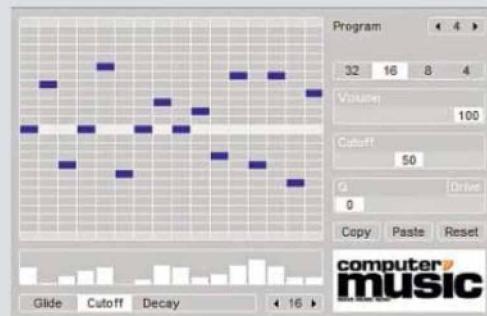
Homegrown Sounds Astralis Orgone CM (PC)

Flexible sample-based synth

XT Software EnergyCM (PC/Mac)

Analogue-style sequencer

This month, be sure to try...



XT Software Energy Pro

From the makers of energyXT, this unusual soft synth is perfect for generating lo-fi, analogue-style sounds. Energy Pro has a built-in step sequencer for creating patterns, which can easily be transposed to whatever key is being used to trigger the instrument - handy for tracking chord progressions. Make sure that you also check out the thoroughly dirty Drive mode for added grit.

XT Software Energy Pro (PC/PPC Mac)

Step sequencing analogue-style synth

Fabfilter One 2.01 (PC)

Beautiful-sounding single-oscillator synth

Kotkas Paax 3 CM (PC)

Feature-packed soft sampler

Odo Synths Unknown 64 CM (PC)

C64 SID chip-emulating VSTi

Krakli CMorg (PC)

Vintage organ instrument

AlgoMusic ElectraBass Rack CM (PC)

Easy to use bass synth that's packed with presets

Humanoid Sound Systems Scanned Synth CM (PC)

Create abstract noises and haunting instruments

Muon CM-101 (PC/PPC Mac)

Analogue-style VST synth

Muon SR-202 (PC/PPC Mac)

16-pad VST drum machine

Muon CM-303 (PC/PPC Mac)

Emulation of the classic Roland TB-303 synth

Muon DS-404 (PC/PPC Mac)

Powerful 16-part multi-timbral VST sampler

Muon CM-505 (PC/PPC Mac)

Analogue drum synthesis made easy

EFFECTS

Acustica Audio Nebula3 CM (PC)

Incredible vintage-kit-sampling multi-FX

Image-Line CM Vocoder (PC)

Special cm version of FL Studio's FL Vocoder

Aixcoutic Creations Electri-Q CM (PC)

Sweet-sounding and flexible equalisation

Martin Eastwood

CompressiveCM (PC/Mac)

Compressor/limiter with sidechain input

Audio Damage Pulse Modulator (PC/Mac)

Wild, stompbox-esque modulation effect

Betabugz Viscillator (PC)

Semi-modular feedback delay multi-effect



Image-Line CM WaveShaper (PC)

Flexible wave distortion effect

PSP Springverb (PC/PPC Mac)

Authentic VST spring reverb effect

SimulAnalog Guitar Suite CM (PC)

Plug-ins modelled on classic guitar effects and amps

Ohm Force Ohmygod! (PC/Mac)

Crazy resonant/comb VST filter

Camel Audio CMFuzz (PC/PPC Mac)

Quick and dirty distortion

cm Studio session

Layering sounds

PC MAC



We show you how to create massive, complex tones by blending instruments from the cm Studio within energyXT2.5 Core cm Edition

> One of the most fundamental techniques in music production is the layering of sounds. This can help beef up parts that lack in weight, or add character to a sound that works in the mix but needs more interest.

Some sequencers make it easier than others to trigger multiple instruments from a single MIDI

part, and energyXT2.5 Core cm Edition, which comes free in the CM Studio folder on the cm DVD, is undoubtedly one of them.

This is particularly useful when using a synth such as FabFilter One cm Edition, which you'll also find in the cm Studio. This gorgeous-sounding virtual synth has oodles of analogue-style

warmth but only a single oscillator, which means that it's not possible to make particularly complex sounds with it. In this tutorial, though, we're going to show you how to use energyXT to play back three instances of the synth at the same time from the same MIDI part, enabling us to make a much bigger, more involved sound than

we'd be able to pull off otherwise.

FabFilter One cm Edition is only available in PC VST format, but Mac users can substitute any of the various Mac synths in the cm Studio - including the excellent AlphaCM and ZebraCM - or download the Mac demo of FabFilter One from www.fabfilter.com.cm

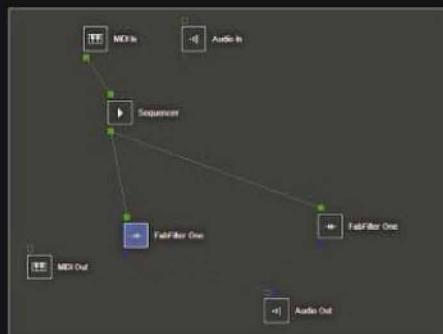
> Step by step Layering instruments in energyXT2.5 Core cm Edition



1 > For this walkthrough you'll need energyXT2.5 Core cm Edition and a plug-in instrument installed. If you don't know how to do this, see the **Beginners Start Here PDF** in the CM Studio\CM Studio Tutorials folder on the cm DVD. Once you're ready to go, load up energyXT and open the **Default** project.

2 > It is possible to route connections in the Sequencer view, but switch to **Modular**, which makes it easier to see what's going on. Delete the existing **Synthesizer** instrument, open the plug-in menu in the list on the left, and drag FabFilter One into the main window.

3 > energyXT will automatically route the MIDI In to FabFilter One with a green MIDI connection. You can now play the synth directly from your MIDI controller, but we want to be able to program a part using the sequencer, so drag from the MIDI In's output to FabFilter One's input to make a new connection.



4 > Connect the green Sequencer output to FabFilter One's input. If you switch to the **Sequencer** view, you'll see that the instrument track is connected to FabFilter One. Program a simple part, as we have here. Click **FabFilter One** to bring up its interface. Set the **Scale** to 16' and the **Waveform** to triangle.

5 > Return to the **Modular** view and drag another FabFilter One in. Again, disconnect the routing from the MIDI In and connect the Sequencer instead. Now when you playback the MIDI part we programmed in the last step, it will trigger both synths. But we needn't stop there...

6 > Add another FabFilter One, routing it just as before. Set the **Scale** to 4' and the **Waveform** to pulse. For some vibrato, turn the **MG** control up in the Frequency Modulation section and reduce **MG** under Filter Modulation. Turn the Modulation Generator's **Frequency** knob up to get a faster vibrato effect and you're done.

Reader music

Another four readers submit their tracks to the judgement of our expert producers and engineers



Send us your music

For the chance to be featured in *Reader Music*, simply send us your track via the SoundCloud DropBox on our website (see the walkthrough below for instructions), along with a description of your act, an image (sleeve art, photo or logo that you own the copyright to), and your equipment list. Be absolutely certain that no copyright samples have been used! The best tracks we receive each month will be reviewed here and featured on the **cm** DVD, so send yours our way today!

Rules:

1. Send no more than two tracks
2. Submit your track(s) via the SoundCloud DropBox on our website
3. The audio and MIDI files used must all be original and/or royalty- and copyright-free

INNOVATION OF SOUND Fluid

Artist Matt Cattell
Contact www.myspace.com/innovationofsound



> A wash of bell sequences and delay bring in this subtle ambient tune. It all seems very simple, but the more you listen, the more you pick up on stuff, which is always a sign of a good production. Matt's refrained from using too many cheap tricks - voluminous reverbs, lush pads, etc. They're there but play a less pompous or washy role.

Instead, the dry (and occasional gated-reverbed) drums keep things fresh, as do the resonant synths and panned delays.

The vocal that starts off through a dull filter and gradually opens out helps to build the track and adds a certain sense of mystery. When it opens fully, it needs more mid-range body to command attention, though. The breathiness is good, but the sibilance isn't, and it feels a little peripheral.

Overall, the track lacks weight and hence warmth - this could come from the bass synth and perhaps the kick. It may be that the over-the-top track compression is sucking the life out - this flaw is definitely causing some unpleasant and disconcerting modulation. The soft bell sequence is enough to win anyone over, though.

What the artist says:

"Fluid started off with a simple bell run and pad. I wanted the track to build up slowly by adding various layers along the way. As the vocals clear for the chorus, I wanted impact to come from the beats and bass. Royksopp and FSOL came to mind when I wrote this."

Equipment used Intel Pentium 4 HD, Xtreme Fidelity SoundBlaster soundcard, Propellerhead Reason 4, Novation Remote 25SL controller keyboard, Loopmasters Polyester loops

DJ ROKNROB LECTRIC LATINO Burnt Henry/Wonder Why

Artist Rob Aquino
Contact rokrob2009@hotmail.com



> The cool beat is the backbone to this rambling track from the Lectric Latino, and hanging from this constant are weirded-out vocals and a meandering, reverberant jazz/blues guitar. The vocal is interesting, but the guitar is annoying - the arrangement needs fixing there.

The drum loop starts and continues unchanged to the end, and beneath it is a great sub-bassline, if you have the monitors to hear that low! A sense of build-up and drop-down to the drum track in places would be a start. A little bit of consideration of the vocal structure might help, and although it shouldn't have a lot of order to it, a bit of space here and there would be good. And then comes the guitar: even if you were to arrange a part, it doesn't really fit stylistically - it sounds like someone noodling in the background and isn't really part of the track. The sound of it is rotten, too, like it's been plugged directly into a line input with all the accompanying impedance issues.

Luckily, the coolness rings through, despite itself.

What the artist says:

"I used Sony's Acid 7 and remixed it with Reason. I played the guitar and bass parts in four takes, starting with sampled drums that were taken from the Acid bundle, before layering bass, guitar and vocals. I used some Blue-Line plug-ins, Acid 7's de-esser and BBE Sound's Sonic Maximizer, then a bit of generic compression. The vocals are definitely me!"

Equipment used Sony Creative Software Acid 7, Propellerhead Reason, Parker guitar, bass guitar, Blue-Line plug-ins, BBE Sound Sonic Maximizer



SoundCloud makes sending and receiving music easy. Anybody can sign up for a free account and start sharing tracks straight away, although you don't even have to do that to submit your track to *Reader Music*...



1 > Go to www.computermusic.co.uk and look on the right-hand side of the page for our SoundCloud DropBox widget. Click **Send me your track**, then **Choose a file** and select your track.

Complete
(Don't forget the name)

1. Track info

Track name: Your Track Name

Track description: Track Name, Artist Name, Your Name, Email Address, Website (or MySpace, etc), Equipment List
This track was made in...

2. More info

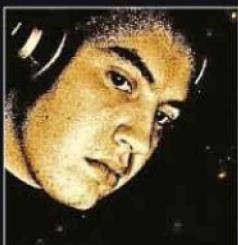
Genre: (max 40 characters) Track Type: BPM: Key:

2 > Enter all of the following in the **Track description** box: track name, artist name, your name, email address, website (or MySpace), equipment list and a brief description of how your track was made.

JOSH LIEBE

Eye Of The Storm

Artist Joshua Leibstein
Contact www.myspace.com/joshliebe



If you were around when hi-NRG came along, you might just get a hint of nostalgia from the opening bars of this track, and although the octave bassline, percussion and four-to-the-floor beats are there, this is much faster than tracks produced back in the day, and a lot more energetic. It also veers towards trance at one point with its spacious synth melodies, but thankfully avoids the pitfall.

The middle-section drop is a huge departure around an interesting melody with a backward feel. It doesn't work as well as it should, though, possibly because the route into it is so long and arduous. A minute of the rising sequence line could be lost here, and the drop would have more impact. The build out of it is very good, and it just seems to get bigger and bigger. At its height, there's arguably too much going on and it's a bit confusing, but it just about gets away with it. This is because the overall sound is really tight - the kick, bass and sequences are punchy and short, and there's good presence and clarity to the top-end. A poor mix would have resulted in a car crash of a track, but this holds things together.

What the artist says:

"The track is a four-to-the-floor, energetic dance tune that gallops along somewhat ominously, before breaking down into an uplifting, hands-in-the-air type melody. I first composed the uplifting second-half melody in plain MIDI. I then sequenced the drums and driving bassline, and set about finding suitable sounds for the leads."

Equipment used Apple MacBook Core 2 Duo 2.2 GHz with 4GB RAM, Novation Nio, Ableton Live 7, LennarDigital Sylenth1, UVI Workstation, Novation Xio, Event ALP5s

Video link: YouTube, Vimeo, Google Video and WebM video will appear in an on-site player.

Artwork: You can upload jpg, png, gif, tif images up to 2 megs.

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3. Your contact info
 Your email address
 A confirmation email will be sent to this address before we send your track.

4. Terms of Use
 I agree to the Terms of Use of SoundCloud.

3 > Click **Upload new artwork** and choose an image. Confirm that you agree to SoundCloud's **Terms of Use** towards the bottom of the screen, hit **Send Track** and you're done!

What's wrong with my mix?

Experienced producer, engineer and remixer Graham Massey gives his considered professional opinion on this month's featured reader demo

Producer/engineer Graham Massey



A key figure in the UK Techno scene, having formed the seminal 808State back in 1988, and a prolific remixer for over 20 years, Graham recently reworked The Whip and Chrome Hoof. He's currently in the studio with his all-girl organ quartet The Sisters of Transistors, for whom he writes, produces and plays drums.

NOISY TOYZ

Feeling Lost

Artist Mars
Contact noisytoyz@hotmail.co.uk



> Described by Mars of Noisy Toyz as "a hypnotic dance track with a heavy marching guitar riff". I'm not sure I'd describe it as such. It does have a stiff 4/4 beat, but there's a heavy gothic vibe that makes an odd hybrid out of the situation.

The track opens with a very solid two-note guitar riff, possibly on a seven-string guitar? There's plenty of low-end, chunky distortion, yet it's very tidy. A haunting minor key melody repeats on a keyboard - the bland choir sound works well, as it doesn't detract from the guitar before the vocals take over.

The vocals are full of whispered menace and do well to sit on top of such a densely textured track, but sometimes it's a bit hard to catch all the lyrics and perhaps some judicious volume riding would complement the compression - I sometimes use a phase plug-in for this, as it can lift such a highly sibilant vocal out of the mud without resorting to more EQ.

There's very little in the way of bass, aside from some synth about a minute in - I would have pushed this to the fore by driving it through an amp simulator or some short delays, to give it some relief or shadow.

The drums are pretty basic, which works for the most part, with half-time loops in the breakdowns, but there's a flatness that's a bedroom studio give away. I'm never sure how much drum programming should interfere with dance music, but in a track that's trying to convey a certain danger and menace like this, some extra drum drama would have been appropriate - I'm not talking two-bar tom fills, but maybe some surprise half-bar edits in the breakdowns, or the odd crash into the next verse.

I can feel the computer grid taking over by about half way into the track, so there could be some development in the keyboard arrangement by that point - again, it just needs something subtle, nothing huge.

Overall, the track has a strong presence, an interesting vocal performance and a nice sense of atmosphere. Noisy Toyz are probably part of a vast, unknown (to me) world of PC attic rock that music technology has unleashed. Are there discos for this sort of thing?

What the artist says:

"This is a hypnotic dance track with a heavy, marching guitar riff. You won't resist tapping your foot to this track. Jamming the guitar over the drum loops, I then added some eerie choir samples to give it tension, and built emotional highs and lows with the time changes."

Equipment used Hewlett Packard PC with AMD 2GHz CPU, Sony Acid 6, Waves VST Diamond/Platinum bundles, Epiphone Les Paul guitar, Line 6 Pod effects, Sony samples

cm Producer Masterclass

King Charles

We catch up with the classically-trained folk musician, at his home and in the studio, to find out how he gets his distinctive sound



Visually, London-based solo artist King Charles is easy to pigeonhole, as he looks like the hypothetical love child of Russell Brand and Amy Winehouse. Musically, though, he's much harder to pin down. Combining a range of influences from blues and country to electronica, his sound has been compared to the likes of MGMT and The Pixies. Veering adroitly between the epic and intimate, it's a melting pot of diffuse instrumentation styles, beats and vocals that results in a very unique sound.

A classically trained musician, Charles learned guitar and began writing country songs in his youth. After an aborted stab at higher education, he played in several bands while working on his King Charles solo project.

"Before I knew the guys at the Mi7 label, another one gave me some demo studio time, which was

basically when I started thinking about production," he remembers. "I'd go to the studio and say, 'No, I don't want it to sound like that'. It didn't sound new or fresh. I liked the stuff I did, but it was a formative

"Gradually, you learn more about what you want to hear and what sounds good"

experience, rather than where I wanted to end up. After that, I started doing production on my own - at first, I was totally rubbish

and didn't know what was going on, but gradually you get there, and you learn more about what you want to hear and what sounds good."

To create his album, Charles worked closely with Mi7 Records, the team behind indie funsters Let's Tea Party. They transformed the multi-instrumentalist's rough demos recorded in Logic Express into slick finished tracks produced in their vintage gear-packed, Pro Tools-powered studio.

In this *Producer Masterclass*, you'll learn how the track *Love Lust* was recorded, first checking out the rough sketch created in King Charles' home studio, before heading over to Mi7's studio to see how it turned into a polished-up finished production.

Web www.myspace.com/kingcharlesuk
www.mi7records.com

Selected kit list

COMPUTER

Apple MacBook Pro
Apple Logic Express
Apogee Duet
M-Audio 410 FireWire

MICS, AMPS AND GUITARS

SE mic
Vintage bullet mic
Fender Tweed amp
60s Epiphone Olympic guitar
75 Gibson L6 guitar
62 Rickenbacker 210 guitar
70s Hoffer guitar
50s Supro guitar
80s Gibson Explorer bass
80s Godin Telecoustic guitar
Harmony acoustic guitar

For the full Mi7 studio kit list see:
www.mi7records.com/nightsessions/

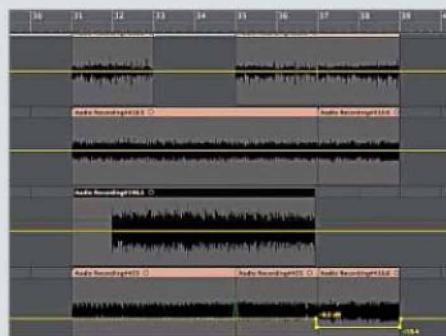
> Step by step Recording the demo of Love Lust



1 > The first part to be laid down is the piano. "This gives me a framework, something to work off," explains Charles. "It's like a foundation that you can put something on top of. Once you've developed the song, you can take it away, although in this case, I chose not to." Logic's **Small Soft Grand Piano** EXS24 patch is used to play in this part.

2 > Getting a natural sounding piano tone can require a bit of processing: "Without an acoustic piano it can sound a bit duff, unless you've got an amazing Nord keyboard or something. I don't, so I have to use the Logic patches and put a few things on it to make it sound more like an actual piano. Compression, reverb and EQ... usually I'll just fiddle around with stuff until it works!"

3 > The drum parts for the rough version of the track are all recorded in Charles' home studio. Because he doesn't have the facilities to properly record a kick drum, sequences one using Logic Express' **Rock Kit** patch in EXS24. The sound is run through a compressor at a **1:2.2 Ratio** to beef it up a bit.



4 > The rest of the acoustic drum sounds are recorded by Charles, with each element on its own track. These are just rough tracks and will likely be recorded again later, but a bit of processing is applied to give an idea of the finished article. "Averb is my favourite Logic Express reverb - you just turn it on and away you go!" says Charles.

5 > "Probably the main part of this song is the vocal," explains Charles. "I recorded them with a bullet mic that makes it really warm, but it's also kind of crackly and can end up not sounding very clear. I've stacked up the vocal many times - there are 19 vocal tracks in this project."

6 > The guitar parts are recorded through an amp with a condenser microphone. "I always add effects before it goes into the amp, so that I don't have to do that much once it's in the computer - I'll put some compression on it and nothing else, really. Sometimes I'll reverse bits or chop them up, but this song is quite organic, so there aren't really any glitches or reversed guitars."



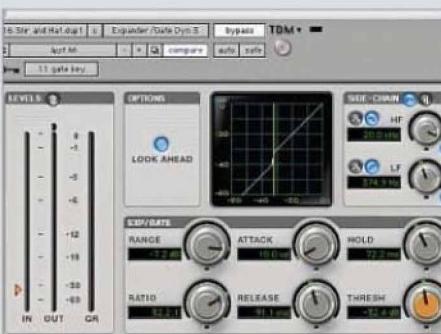
7 > The track doesn't have a bassline all the way through, although during a heavier section, an electric bass part makes an appearance. This is heavily treated with Logic's Channel EQ to bring out the low-end frequencies, then compressed. "I wanted it to sound really bassy, to counter the screeching guitars," comments Charles.

8 > "Combining sounds is quite an interesting thing to do. Here, I've got a marimba playing exactly the same thing as the piano, which gives it a woody sound and makes it slightly more percussive." The Channel EQ plug-in is used once again, this time to bring out the marimba's mid-range and treble frequencies.

9 > Once the demo has been finished and arranged to his satisfaction, Charles exports the individual tracks as audio files, so that it can be loaded up into Pro Tools at the Mi7 studio, where parts can be polished or re-recorded, and the track can be mixed.

> Step by step

Polishing the track in the studio



1 > The track is imported into a Pro Tools project at the mi7 studio. Here King Charles' so-called "Logic crimes" are corrected by the studio staff. The drum tracks are a bit messy, so the first task is to sort them out. Once they've been organised, Pro Tools' BF76 compressor (a Universal Audio 1176 clone), is used to tame the snare peaks during the heavier part of the track.

2 > In another section of the track, the hi-hats are poking through excessively, so an expander/gate is applied to them. This is triggered via a sidechain input from the snare, which causes the hi-hats to duck out whenever the snare plays.

3 > In order to beef up the drums during the heavy section, the Mi7 staff add their own drum kit and a kick sample that gives everything a much fuller sound. The drums are treated as a group, too, with a Fairchild 660 compressor and URS N12 series plug-in EQ. These are activated and deactivated at different points in the track to give it a consistent sound.



4 > At the start of the track, the kick drum sample is high-passed to make it softer. This is done with an automated Sony Oxford Filter. A URS EQ is used to toughen up the kick during the middle eight by boosting the sound in the 100-700Hz range.

5 > To toughen up the picked bass part, several plug-ins are used, including the SansAmp PSA-1, Amp Farm and Tape-Head. The URS EQ is also employed to cut the signal slightly at 200Hz.

6 > "One thing with Charles' sound is that he loves a bit of compression. We have to spend a lot of time listening to how he's done it and attempting to get a similar sort of vibe going on," says Mi7 producer, Geoff Southall. Here, another 660 is used to drive the guitar part very hard indeed. A Pultec EQ is used to brighten the guitar track, and finally a Tape-Head plug-in is used to saturate the track again.

Live Lust

King Charles' musical outpourings are by no means confined to just the studio, but his live sets take a bit more effort than the average indie outing....

"When I finished making the album, I wanted to play the songs exactly how they sounded on the record," begins Charles. "The track *Love Lust* is relatively simple, but some of the others are more complicated, and if I were to play them live with just a band, I'd need 10-15 people on stage, which is expensive and isn't really viable spatially. What I do now is play off a backing track and then have four people on stage - a drummer, bassist and keyboard player - and I play guitar and sing. The bassists and keyboard player do backing vocals, too - I try and get everyone to do as much as possible!"

Using a backing track is unusual for a

guitar-based act, but as Charles explains, there is method to the madness.

"It's a good way of reigning in a live show, because I tended to get carried away on stage and a song would go on for ten minutes once we got into the swing of a guitar solo. The backing track comes off Logic - I basically just bounce everything down without vocals or guitar. I leave on strings, some of the drums, any sound that's crucial to the song and needs to sound the same live. The drummer plays to a click track, and the keyboard sounds are played via MIDI off the same laptop - it does everything."

Having elements of your live set pre-recorded doesn't particularly conform to the rock 'n' roll convention - a fact that's not lost on Charles.

"I don't necessarily love the idea of playing

with a backing track, and it's something that I want to phase out. For now, though, I feel like it's the right thing to do. It makes life a lot easier and less expensive, and on the tour we just did, it worked really well. I thought people might be opposed to it, but I didn't really come across anyone who has been. I've done some gigs where it's just been me, another singer and the backing track, so no drummer or bassist - I have a backing track that I can use without any of the other instruments, but then that's a little bit less band-like. There are some tracks that it doesn't suit - a guitar track coming from a backing track and not on-stage sounds a bit weird. We used my computer for a while, but it started shutting down in the middle of songs with a Core Audio system failure. We'd have to go on without it, which was quite



7 > To add a little analogue flavour to the piano sound, it's EQed with a TLA parametric valve EQ. To add extra crustiness, it's also pushed through a SansAmp PSA-1 plug-in, with the **Punch** and **Crunch** settings turned up. This effect also boosts the highs and lows slightly.



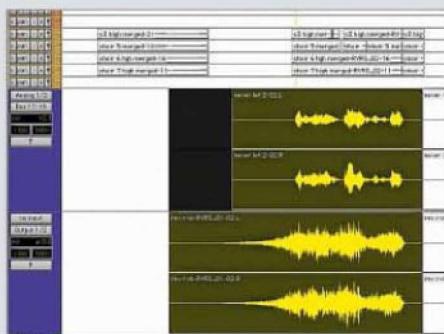
8 > The Averb settings used on the demo version of the track worked well enough, so the team use Pro Tools' D-Verb to emulate the same sound. The bullet mic Charles uses gives the vocals a distinctive thin, distorted sound, which can be slightly piercing, so a Massey De:Esser plug-in is used to take some of the harshness out of the vocal lines.



9 > The processor chain on the vocal is quite unusual - the D-Verb comes first, followed by a Fairchild 660 compressor. This makes the reverb tail of the vocal louder than if the reverb came after the compressor in the more traditional manner, giving the vocal an even more distinctive sound.



10 > The big 'choir' vocal features various harmonies grouped together and routed through a D-Verb and a compressor, then finally are warmed up with another tape emulation plug-in, the Crane Song Phoenix Dark Essence plug-in. "This thickens things up a bit, which helps vocals recorded on the bullet mic that have too many high frequencies - it's nice to warm it up a little bit," says Geoff.



11 > To get the vocals to swell nicely, a classic 'reverse reverb' effect is used. This involves reversing a section of the vocal, then running it through a reverb. This is then bounced down and reversed once again, resulting in a reversed reverb that leads into the unreversed vocal line.



12 > Finally, a sound effect is needed to enhance one section of the track. Rather than go through the complicated processing of synthesising something from scratch, the team use a vocal sound run through a PhaseMistress and Extra Long Delay II effect to create an abstract noise that fits the track perfectly.

interesting, because it didn't really affect the show that much. It would have been a disaster if it had been the tracks where it's literally all backing track, like the much more dancey songs. I was quite pleased that we actually managed to get through it, and it wasn't an absolutely catastrophe - I've been on stage when the backing track has stopped and I haven't been with the band, and then you're on your own with a mic and no backing track. I basically had to just rap my way through the track, doing the whole thing acapella!"

Wrong place, right time
King Charles' genre-bending ways have been the source of some confusion when it comes



King Charles runs Logic on an Apple MacBook Pro for his live backing tracks, which hasn't always gone to plan

to the live act, resulting in some very unusual situations indeed.

"One of the strangest gigs was when we played the 1-2-3-4 Shoreditch festival. I had

my whole band with me and the guy goes, 'Yeah, you can't play with drums, bass or guitar'. Then he showed me the tent - I thought we'd be playing on a stage at least, but we were in the dance tent, because he'd only seen me doing a backing track set. They were playing DnB and dubstep in there. This was at about four in the afternoon, everyone was dancing away, having a party, and the last thing I wanted to do was get on stage and do a backing track set in a 'live PA' style. It was absolutely terrifying, but it actually worked! I could only really do three songs, but I think people responded to it quite well. I don't want to do that much myself, though, because you need people around you to draw focus. It needs to be a spectacle." cm

Into the groove

Inject some human feel into your tracks with our guide to applying groove, swing and shuffle

The vast majority of cm readers will be aware of the concepts of swing, shuffle and groove, whether from investigating the controls in their DAW, listening to funk music or reading about James Brown. But what do these terms really mean? And how do we make good use of them?

Our dictionary defines 'swing' as being "to play music with an easy flowing but vigorous rhythm", 'groove' as "a rhythmic pattern in popular or jazz music", and 'shuffle' as "a rhythmic motif typical of early jazz, consisting of alternating quarter notes and eighth notes in a triplet fashion".

Now if you find all that unhelpful and confusing, don't worry - it is. It's perhaps no wonder that people are often befuddled by the idea of groove, swing and shuffle, and many either neglect it altogether, or simply don't realise when they're using them. But make no mistake: it represents one of the most important features of modern music, and it pays to know all about them, which, in six pages time, you will!

OK, so broadly speaking, you can think of

groove as being to do with moving away from rigid quantise timing. How much variation, whether this variation involved moving notes ahead or behind the quantise grid, the strength of each note and which notes to move all depend on the specific groove you're creating, but those are the main issues to consider.

Ain't it funky

Without groove and swing, electronically sequenced beats sound relentlessly rigid, which can be desirable in certain styles of music, but sucks the life out of others. Breaks, drum 'n' bass, hip-hop, dubstep, house... The majority of modern programmed genres just wouldn't sound 'right' without the application of swing and the mapping of grooves.

With the ability to sample, chop, analyse and map proper grooves, and the popularisation of computer-based music production, whereby people play instruments less and program more, the need (and ability) to add groove consciously with technology has become more essential than ever before.



ON THE DVD
TUTORIAL FILES

You can find all of our
funky fresh audio, MIDI,
REX and Reason Project
files in the Tutorial Files
folder on the disc.

Improve your groove

Before we start looking at examples of the techniques required to create groovy music in our sequencers, let's get a clearer idea of the concepts involved.

First, the terms, which can be confusing. By 'shuffle', we mean the application of a specific timing shift to every other 16th-note, making it arrive later than expected. When pushed hard enough, this results in a triplet feel. This is what the Shuffle and Swing controls on old-fashioned sequencers and drum machines were for.

'Groove', on the other hand, is much more

flexible, as groove maps aren't locked to every beat or half beat. Real players' grooves will have regular variations spanning a whole bar or more. In just about any modern DAW, grooves can be extracted from MIDI or audio recordings of live performances and applied to other parts, superimposing the timing and dynamics (for those two things essentially combine to make a groove) of the former onto the latter.

It's important that when we use the words 'shuffle' and 'groove' interchangeably, we're aware that a groove might not necessarily just consist of swing, but that all swing is a type of groove.

Certain types of music are downright funky. They're the styles that make you wiggle, rather than sway, and spin rather than bounce. Groove can also be about the difference between 'leaning' forward or back, and this is a vital characteristic of many types of music - largely

those based around dance, or generated by cultures that have a strong tradition of dance.

Technology has enabled us to see exactly what it is about a track that makes us do one or the other, generate templates for it and use these in our own music. This is integral to many genres and has never been easier to do, thanks to the power of software.

Of course, there are many, many ways in which the tools can be applied. For example, a live rock band will offer a wildly different set of groove maps to a funk band, and a waltz combo will offer up a very different vibe to the Swing function on Native Instruments Maschine.

Get up and dance

As to why we prefer certain types of grooves over others, who knows - but there's no doubt that some specific grooves are accepted as very pleasing. Classic drum machines and the millions of people across the world who dance weekly to their timing nuances vouch for that, and the fact that many of these groove types transcend seemingly disparate genres like house, hip-hop, breaks and pop shows just how effective they are.

So, having established its importance, let's move on to some techniques for extracting grooves and applying them to other parts. Some of these will vary in terms of specific parameters from sequencer to sequencer, and sometimes you might want to make things more 'straight' (the same groove tools we use to add funk can be used to take it away!), but the concepts remain the same regardless, so be sure to go through it all. **cm**

The perfect groove?

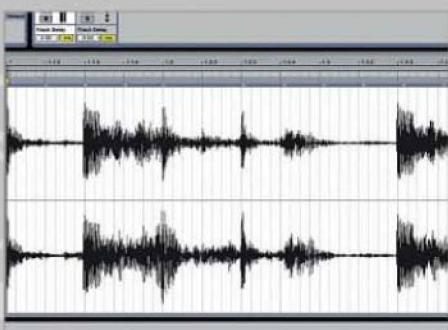
Over the last decade, there's been fierce debate between users of different sequencers as to which might be the best choice for creating great and groovy music. Until the ability to easily create groove maps, many hip-hop producers would swear up and down that nothing could compete with their hardware groovebox of choice, be that the E-MU SP1200, Akai MPC60, Roland TR-909 or any other classic kit. And many hard house producers would insist that only the swing quantise in Logic could give the results they wanted.

Of course, the reality was that a skilled user could get great results out of anything, but there have always been significant differences between platforms.

Today, the vast majority of software sequencers offer broadly the same utilities, including elastic audio, advanced MIDI quantise and groove extraction, and increasingly without the need for any additional software, such as the once-essential Propellerhead ReCycle.

So, is there an ideal sequencing platform for creating great groove-based music? Yes, almost any of them, and if you're making music with any of the latest crop of DAWs, the chances are it already qualifies, so don't worry about the endless upgrade path to swinging nirvana, or what other people tell you - just focus on extracting every last ounce of groove potential from what you already have.

> Step by step Making a groove template



1 > Creating groove templates is an important skill for any computer musician, and if you follow these general techniques (demonstrated here using Ableton Live), you'll be doing it in no time. Start by loading the **Groove Template** audio file from the **cm** DVD onto an audio track. Zoom in on the audio and check the placement of the transient markers.

2 > It's essential that the slice points are accurately placed on the audio transients, since they represent the timing of our groove. In Live, hold down **Shift** and drag any markers that aren't perfectly placed onto the start of each transient. Your host will handle this slightly differently, but the general idea will apply across a range of DAWs.

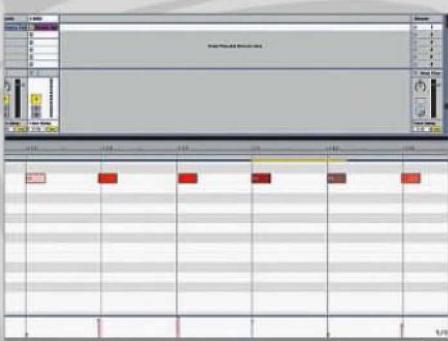
3 > With electronic music, it's vital that the timing of the kick drum stays solid, so turn those transients (and the ones immediately after them) into warp markers and drag the kicks to their nearest beats on the timeline. This ensures that when we extract the groove map, the kicks will all be dead on the beat.



4 > We don't need to turn the other transient markers into warp markers to extract the groove (unless we want to move any of them first), so now we simply right-click the waveform and select **Extract Groove(s)**. Live analyses the part, extracts the groove and adds it to the Groove Pool.

5 > Open the **Groove Browser** and find the freshly created groove (named after the clip we extracted it from). Drag it onto a MIDI track and open it in the MIDI editor. Here we can see the timing and velocity of all the notes in our groove.

6 > There are points in the groove where no notes fall, as our source loop didn't have a transient event on every 16th note. To make a proper template, though, we need to put some information in there. The easiest way to do this is to take other sections from the groove and copy them over, as we have here.



7 > Check whether the swing repeats every other 16th-note. Grooves created using electronic templates - or those take from machine-calculated intervals - should do, and ours does, so we can just delete the note in front of the gap (or the nearest one to an exact beat), and copy two notes from somewhere else in the groove, using the rigidly placed one to line them up.

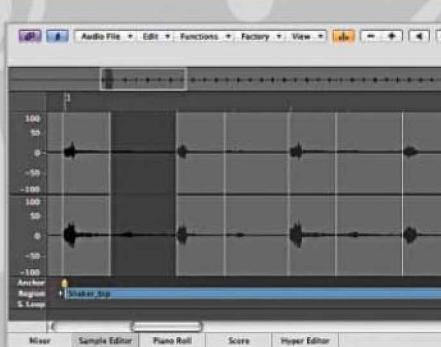
8 > Scan the MIDI part and make sure there's information in there for every 16th-note, that the velocity settings are either skipping regularly in height or are approximately the same throughout (entirely the same for electronic grooves), and that all the notes that should be quantised exactly to the beat are so. Re-export the finished groove, delete the previous one and you're done.

POWER TIP

>ReCycle grooves

Most DAWs now enable this type of procedure to be done entirely internally, but some, such as Reason 4, might require Propellerhead's ReCycle to chop the audio files into a format from which the groove can be extracted. ReCycle is still a very worthwhile investment beyond that, though, as it has some clever tricks up its sleeve when it comes to chopping samples that other packages can't match. So even if your sequencer subsequently (or currently) facilitates internal slicing, you can still get plenty of creative mileage from ReCycle.

> Step by step Creating a live feel



1 > Let's add some human feel to a selection of recorded audio loops, using Logic Pro 9. To start, load the audio files in the **Live Style** folder on the DVD onto separate audio tracks. Some of these have been taken from programmed material, some from looser, live-style loops. The groove repeats over one bar, so that's all we need.

2 > The first step is to either chop or set transient markers at each of the main hits in the audio files. Because we're trying to retain a live feel, we don't want to be quite as precise as when we're creating a groove template, particularly if we're going to use the groove on a MIDI part, as this can generate unnatural clicks between individual notes.

3 > Next, select your groove of choice - we're using a map taken from a classic groove record called **Live Groove** - to apply to the parts you want to humanise. We don't want it to affect our kick, however: we're trying to keep things DJ-friendly, so we need that particular element to stay solid.



4 > Extracting grooves and adding them to the groove quantise pool is easy in Logic. Simply highlight the region that you're using as a template and extract it using the **Quantize** menu at the top left corner of the screen. Once that's done, place the template on a hidden track in the arrangement - deleting it will delete the groove map!

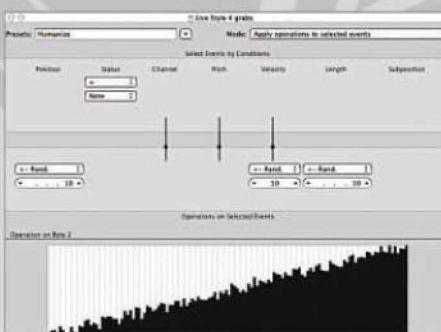
5 > Next, we need to convert the transient-mapped audio files to MIDI parts, using Logic's new function. We're not using audio quantising (for reasons we'll explain shortly), but in some other DAWs, you can do that instead. Our groove map should be visible in the list of groove templates and all of our parts ready to go.

6 > Open each part in turn and apply the new groove to them - using 100% groove application and no random variations (the default setting, in other words). All of our parts now have a 'human' swing to them, but they're unnaturally over-synchronised. A good band will be tight, but not that tight!

POWER TIP

> Tiny steps

We are using Logic for our walkthrough, but not all sequencers offer humanise functions in quite the same way. Most enable you to apply a degree of randomness to both the placement and velocity of notes, though, so if you don't have a humanise option, try using very tiny random quantisation values instead, applying a number of tiny values in succession (the smallest percentage). You'll want to commit to each change if your sequencer doesn't do it automatically, as it's important to visually check that the velocity levels and note placements haven't strayed too far, and for you to be able to fix any overly drastic changes by hand.



7 > Highlight the parts again, go to the **Transform** option in the MIDI editor, select **Humanize** and apply it to them all, adding random tiny changes to the placement and velocity of each note. You can apply it a few times to some lighter sounds, like hi-hats or ghost notes on the snare. This should automatically create a much looser, live feel, which works on both melodic parts and percussion.

8 > Now we just need to go through and manually tidy up any glaringly loose notes. These can crop up when sharp percussive sounds strike at the same (or nearly the same) time. Finally, use some manual pre-delay and delay on certain channels to emulate the way real players would play slightly ahead of or behind one another, creating a convincingly live feel.

> Step by step

Creating a tight electronic funk feel



1 > We've looked at how to get looser natural grooves, but getting a rhythmic electronic groove is different. Start by loading the **Electronic Funk** drum files and MIDI parts from the **cm** DVD into a series of samplers and MIDI tracks. We're using Logic's EXS24 sampler, but any DAW will do. Quickly audition the samples and MIDI parts to make sure they play back properly.

2 > Go through the parts and reduce all the MIDI notes to their absolute shortest possible lengths, then go into the each sampler and use the envelope release parameter to adjust the length of each drum hit. Once that's done, starting with the hi-hat sound, try adjusting the lengths of some of the MIDI notes to create a pseudo-shuffle groove feel before any actual quantisation is applied.



To MIDI or not to MIDI?

Until recently, if you wanted to perfectly recreate the grooves from your favourite tracks, a fair amount of dedication and commitment was required, as the audio had to be chopped into its constituent parts and loaded into a sampler. Even Ableton Live, with its amazing elastic audio engine, didn't offer groove map quantising in its earlier incarnations, so you'd have to manually line up your audio to a template. No mean feat! Meanwhile, those working in Logic had to use ReCycle to slice up their audio, then import the slices into a sampler to apply Logic's MIDI grooves. And it was a similar story for Cubase, Reason and most other packages.

Thankfully, the situation today is very different. Reason now offers extensive groove quantise and mapping facilities, Live has acquired groove mapping for both audio and MIDI, and most of the main DAWs now enable quantisation of audio and MIDI.

So why bother ever using a MIDI-triggered sampler again? Well, there are still a few advantages. First and foremost is the ability to easily re-sequence grooves. Of course, you can chop and move sections of audio, but the easiest way to alter patterns, or completely rework whole sections, is to have each sound tied to an individual note - and this is often the difference between a great new groove or a shameless rip-off.

The other huge advantage is that by placing the parts in a sampler, you can bring to bear all of its powerful features, not least of which are the note length and envelope controls. The ability to shorten the decay component of the envelope is great for reducing clutter and reverb between sounds, while MIDI note length is one of the most important transforming factors in any groove.

3 > Load the **Electronic Groove Template** MIDI file from the DVD and extract the groove from it. As with the live groove tutorial, we want to apply this groove to our parts - including the kick this time. This particular groove is one of the classic MPC ones.

4 > Already, the groove is much more shuffled and funky, but by trying it on some parts and not others, we can hear how the effect can be accentuated according to how many - and which - parts have the groove applied. You can also hear how some of the heavy parts begin to clash.



5 > Apply the groove to all of the parts - none of them should clash. Now try using channel delay to create a more driving groove. Experiment with the different parts. Another good trick is to pull the claps on beats 2 and 4 slightly ahead of the beat - creating a more funky, natural timing.

6 > Finally, you can get a great change of vibe by adjusting the start points of the drums in the sampler. Try taking a bit off the beginning of each in turn, to hear the effect it has. By the end, you should have a very funky, swinging rhythm, rigidly synced to the other elements of the groove. Listen to our final version (**Electronic Groove.ai**) to hear just how funky electronic music can be.

Chopping up a loop and playing individual slices via a sampler, like Logic's EXS24, is a great way to create new grooves



There are a number of things to be considered when choosing source material for groove extraction

Getting more out of groove templates

When selecting material for groove templates, make sure it's useful, appropriate and easy to use.

Whether or not something is useful is largely a matter of taste. We're all for experimentation, but if you're working on a specific project, it's usually best to go for something that you have a good idea might suit your track. So if you're after a Fedde Le Grand shuffle, don't expect to find it on a vintage dub record.

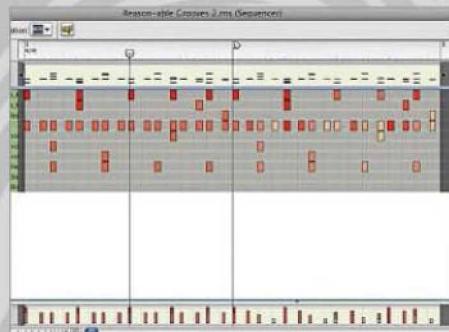
Just as important as choosing the right grooves is selecting something that lends itself to groove mapping. You want material with as many 16th notes in it as possible, so as to create the most useable map, otherwise only some of the notes will be quantised. With shuffle, you can always repeat a section, as most machine-created grooves will use the same shuffle on every beat; but any kind of played groove will have nuances that occur over longer periods.

Sharp transients are also vital, as slower attack times make it very difficult to detect the correct start point for each sound, defeating the whole purpose of creating a groove map in the first place.

Equally, choosing the right groove map length is essential. Length-wise, you'll want it to be rounded to the nearest bar. And if it's more than a bar long, you'll probably want the number of bars to be a multiple of two, otherwise it'll loop in unexpected places.

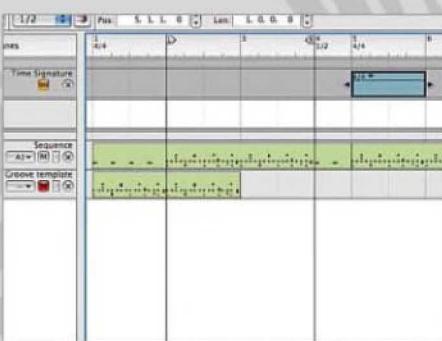
Finally, keep an eye on the velocity levels of your source material. Depending on your software, this can have a varying effect. So when you've created your map, check the velocity information - if necessary, smooth over some of the velocity jumps and re-extract the groove from the revised file.

> Step by step Reason-able solutions



1 > All of the sequencers we're looking at have a variety of groove-related tricks up their sleeves, but we thought we'd take a quick look at the ones that set Propellerhead's Reason and Record apart from the rest. First of all, load the project **Reason-able Grooves** from the DVD and open up the **ReGroove** mixer. If you look at the global controls, you'll see that the **Anchor Point** is set to **2**.

2 > The reason for this is that there's a one-bar count-in at the start, but a quick look at some of the regions shows that we've created a two-bar groove for this track. If we had left the **Anchor Point** at 1, the groove would be applied a bar early in relation to where the music starts.



3 > Let's say you want to add a drop or break to your track. Four bars into the track there's a two-beat count, which will do even more damage to our groove. Fortunately, in Reason and Record grooves are re-triggered whenever you insert a time-signature message (set to the same as before, in this case), so simply do that after the two beats.

4 > Next, we want to split our drums across different channels, so that we can try applying different groove settings to each. Record does this better than Reason: in the **Tools** window, simply select the handy **Extract Notes To Lane** function, then assign a different ReGroove channel to each one. For Reason users, we've done it for you and saved the file as **Reason-able Grooves 2**.



5 > Load the same groove into each of the ReGroove channels, but try applying different settings for each. The **Slide** control sets the channel delay, but the **Amount** slider, controlling how close to the specified quantise grid notes are moved, can also be very useful for making some sounds appear to fall just ahead of others. Try placing the hi-hats just in front of the tambourine, for example.

POWER TIP

>Off the grid

All of our parts were programmed in Redrum, and so fall onto exact gridlines to begin with, but if they'd been played manually, or had had different grooves applied and committed to the clip earlier, we would need to ensure that the notes were moved in relation to the fixed 16th-note grid, not relative to their actual pre-quantise positions, which wouldn't create parts that line up. To eliminate this, we can engage **Pre-align**, pulling the notes to the nearest 16th-note from the start. This is important to be aware of, as Reason isn't the only DAW that handles groove quantise like this.

Essential groove tips

NATURAL TALENT

Try playing your parts - including drums - manually. If you've programmed them already, go back and try to play them in real time. You'll naturally add your own swing, which you can subsequently tidy up, and ultimately, your grooves and tracks will sound better for it.

EMBRACING CHANGE

If your quantise engine enables you to add an element of randomness, give it a try, as it can often make things sound much more natural. Be aware that you might need to adjust some of the critical notes, or exclude them from the quantisation, though.

BREAKING OUT OF THE GROOVE

Don't just use the same groove map over and over. It can be easy to fall into this trap, but nothing generates creative stagnation faster than using the same trick in the same way time and time again. Always try out new maps every few projects - if they sound rubbish, you don't have to use them!

VISIT THE LIBRARY

Build your own library of groove maps, taken from your favourite tracks, both new and old. And as we hinted at earlier, try using them on some unexpected types of music.

MANUAL OVERRIDE

Don't just rely on rigid groove quantisation maps or grooves that you've extracted. Try shifting notes manually occasionally, especially once you've spent a bit of time

getting to know what such changes do to the sound - you can then make a whole new map out of your edited groove and save it into your library.

IT WORKS BOTH WAYS

We often say that pre-delay adds a sense of urgency while delay makes things a bit lazier, and taken in isolation, this is normally true; but it's worth noting that sometimes delaying one element might make another sound like it's pushed forward - increasing the perceived pace - so always try both directions.

SIZE MATTERS

Don't ignore what we've said in this feature about the length and strength of notes being almost as important to the groove as their actual placement. This is as true of drums as anything else, so with electronic music, use sharp note length changes; and with real drums, try tightening decay times or muting or damping them with pillows and other softening pads.

BEDTIME READING

Read the section of your DAW manual relating to quantise and groove exhaustively, as each one has its own features, which can be useful, fun or just plain confusing... but everything will be specific to that sequencer, so it can be easily overlooked.

HARD AND FAST

With all our talk of groove quantise, it's important to remember that swing is only swing when measured against strict quantisation - so sometimes it's worth having an element in your track *without* swing. In particular, electronic music often benefits from having at least one fast, straight element - say a closed hi-hat on 16th-notes.

BACK AND FORTH

When emulating music that's been played live using programmed electronic techniques, it's important to mimic the playing style of real instrumentalists. So listen closely to your chosen style and analyse it meticulously. Does the bass player play 'in front of' or 'behind' the drummer, for example? These are the touches that will add authenticity to your music.



Real musicians play slightly ahead of or behind each other, so be sure to listen out for this when you're aiming to replicate a certain style

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**MUSIC IN TWO SIMPLE STEPS
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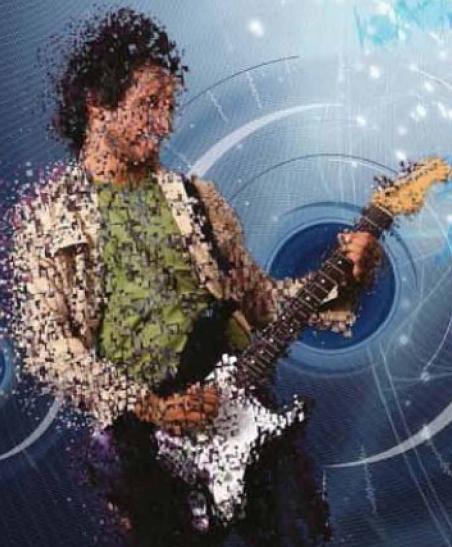




ON THE DVD

TUTORIAL FILES

The various WAV files referred to in the walkthroughs are in the Tutorial Files folder



The best of *Guitar Lab*

In this final instalment, we revisit some of our most pertinent tips, tricks and techniques for guitarists

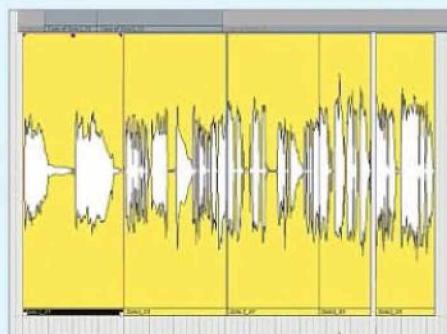
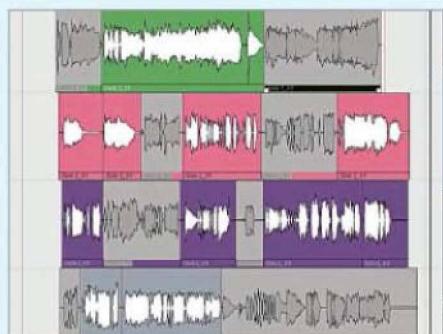
> Over the last 30 issues of **cm**, *Guitar Lab* has covered everything from preparing for the perfect session to slicing up sustained guitar chords to produce synth-type effects. Even though we've looked in-depth at many kinds of effects processing, the basic message has always been the same: everything in moderation, use your ears, and ensure you get a great take. As Killswitch Engage guitarist and producer Adam D told us in **cm136**: "If it sucks from the beginning, it'll suck at the end. There's no way around a bad sounding performance."

Another key piece of advice we've regularly given is that experimentation can be great, as long as the time is right. Your ultimate goal should be to learn how everything in your plug-in folder works - when you're in the middle of a really important recording, you don't want to suck the energy out of the session by laboriously auditioning every single parameter, purely because you don't *really* know what each one does. Set aside some time for writing or experimenting with different sounds and go nuts - not only will these pressure-free sessions be a ton of fun, but you'll also learn some valuable new tricks that may well pay dividends when you need to work efficiently.

Our other main point was that, while commercial plug-ins are great, there's a great deal that can be done with freeware - and there are few better than the collection of great amp sims in the **cm** Studio. These leave you with no excuse for weedy, lifeless guitar tones.

This month, then, we'll revisit the top tips and most popular techniques we've covered in the past. Let's go back out for the encore... **cm**



> Step by step Compiling a solo

1 > It can be hard to get a flawless solo down in one take, but as long as the guitarist is playing roughly the same thing every time, it's possible to comp several different takes into one perfect one. We start by recording a solo four times. None of the takes are perfect in their own right, but they all contain something of value.

2 > To identify the parts of each take that are worth using in the full track, listen through them and mute any sections that aren't quite good enough. This leaves just the sections that we want to keep audible.

3 > Create a new track, then copy and paste the best sections for the four original takes into one track. It's worth double checking that each section musically connects with the others - this can be an issue when the solos are improvised. Lastly, use crossfading to ease the transition between each of the sections. (Audio file on the disc: **Compiling**)

> Step by step Freeware tones

1 > We record a classic rock track, which features two rhythm guitars and a lead guitar. Starting with the first rhythm guitar, we call up the **cm** Guitar Suite and load the **JCM900** emulation - in fact, the **cm** Studio is packed with many great amp sims, so make time to explore it further. For added crunch, select **Channel A** and set the **Drive** to **10**. To help it cut through the mix, boost the **Mid** to **10** and **High** to **7**.

2 > Our second rhythm guitar part also gets the **cm** Guitar Suite treatment. Using the **JCM900** emulation again, opt this time for the slightly more distorted **Channel B**, jack the **Gain** to **10**, boost the **Mid** to **7** and leave all the other controls as they are.

3 > We're looking for even more attack for the second rhythm part, so we again call on the **cm** Guitar Suite, going for the **Tube Screamer** emulation this time. Set the **Gain** to **6.9** and the **Tone** to **7**. This adds a little more distortion and gives us more mid-range presence to help the guitar cut through the mix.



4 > We use Studio Devil's excellent freeware **British Valve Custom** plug-in next, with both the **Gain** and **Drive** ratcheted up to **10**. These settings push the amp very hard, so that it emulates the sound of a fully-cracked Marshall.

5 > Next, boost the **Mid** to **7** and cut the **Treble** to **4**. Roll the **Presence** off to around **3**, which dulls our tone slightly. The result is an aggressive lead guitar tone that isn't overly bright.

6 > Finally, we use **Electri-Q cm** to complete our lead tone. Apply a cut at **200Hz** and a **3dB** boost at **3.5kHz**. This helps us isolate the most important part of the lead guitar's sound and maintain its clarity in the mix. (Audio: **Freeware**)

Essential Guitar Lab tips

BE PREPARED

There's nothing more frustrating than starting a session with big plans, only to find out that you've achieved nothing by the end of it, because either you or the guitarist that you're recording didn't know the part properly. Working everything out in advance will save hours - it may even pay to produce a rough demo before the actual recording, just to make sure that you're ready.

CHANGE GEAR

Another session-stopper is poorly maintained equipment. Old strings lose their ability to stay in tune all the way up the neck. The high volume of a live performance can often mask such tuning problems, but there's nowhere to hide in a recording.

CUTTING EDGE

This is perhaps *Guitar Lab*'s most frequently despatched piece of advice: there's nothing usable on a guitar track below 50Hz (80Hz, in most cases), so cut this frequency range out to remove unwanted rumble. This will leave space for the low-frequency sounds that you do want to hear.

KNOW YOUR DIRT

There are big differences in the amount of grunt that you get from different types of distortion. A gain setting of, say, 8 on an overdrive unit will produce a sound that's breaking up but retain clarity. A distortion unit with the same gain setting, however, will produce a smoother, more saturated tone. Knowing the difference will help you find the sound you're looking for quickly.

MIDDLE OF THE ROAD

A guitar's character is found in the mid-range, which happens to also be where it cuts through the mix. In isolation, it can sound smoother with the mid-range cut (this also aids fast playing). However, in a full mix, this will turn your track to mush.

GENTLE CRUSHING

Compressing clean tones can be an effective way to give a part more punch, but be aware of the very fast attack times available on some digital compressors. A super-fast attack time will crush the initial transient, leaving your guitar sounding lifeless and unnatural.

SPECIAL FX

If your track has several guitar layers, create an auxiliary channel and send each layer there to be processed by a shared set of plug-ins, rather than using inserts on each channel. This saves you from having to duplicate settings, reduces CPU usage and means that a single plug-in adjustment alters every guitar.

BYPASS... A LOT

It can be easy to get drawn into adding lots of plug-ins and spending hours tweaking them to find the 'perfect' sound. Hitting the bypass button at regular intervals will help you monitor your progress and, most importantly, enable you to check whether your changes are actually improving the sound.

ORDERING EFFECTS

Placing effects at different positions in the signal path can have a profound effect on the sound - for

example, phaser to distortion will sound very different from distortion to phaser. It's so easy to move plug-ins within any DAW that it always pays to spend a few seconds checking if a changed signal path improves your sound.

TAKEAWAY

Getting a good take is essential. You may be able to work miracles with audio manipulation, but a well-played, authoritative performance has a feel that can't be re-produced by editing.

TURN IT DOWN!

Guitarists like the sound of their instrument, which can seriously bias their mixes. Solos can be excessively loud and rhythm guitars can often dominate a track. Mixes like this are all too common, sounding as if the rhythm section are in a different room to the guitars, and they rob the track of its energy. Don't be afraid to back off the guitars and let the other instruments breathe.

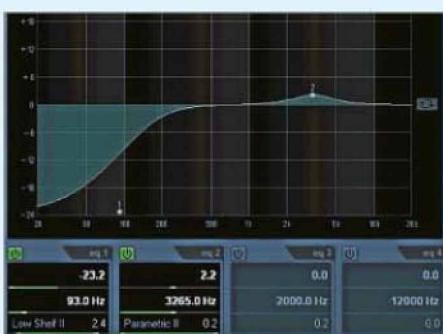
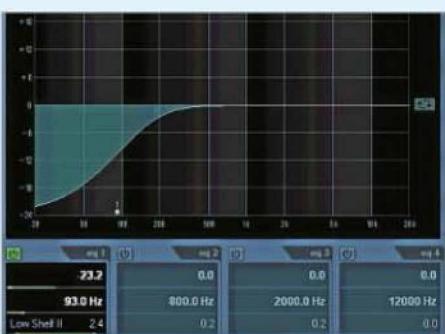
SEPARATION

A key element of getting a great mix is separation of all of the different instruments. To nail this, pay less attention to the guitar's sound when it's soloed. Instead, focus on the part of its sound that you want to cut through the mix and remove everything that you don't - see below for more on this technique.



Always change your strings before a recording session, otherwise you risk poor intonation ruining your takes

> Step by step EQing a solo to cut through the mix



1 > We record an aggressive guitar solo over our metal track, then dial in a hi-gain sound and enhance it further by adding AmpliTube's Tube Screamer emulation, **Overscream**. Wind the **Drive** up to **10** and move the **Tone** up to **8**, which will add some bite to your tone. You could also apply a touch of delay, as we have.

2 > Our solo is very high pitched, so we're only interested in the upper mids and top end. We don't require anything else from this part, so roll off everything below **250Hz**. This adjustment provides extra room for the bass and rhythm guitars.

3 > The real 'action' in this guitar part is at around **3.5kHz** - this is that area that we want to bring out in our mix, so we boost it by around **2dB**. On its own, it sounds very thin and harsh, but it sits very well in the full mix. (Audio: **EQing_a_solo**)

> Step by step

[Back to your routes](#)

1 > All the amp developers we've spoken to in *Guitar Lab* felt that routing options were the most under-used part of their programs. AmpliTube has eight, and the sixth one gives us two separate stomp and amp channels, which are then joined, before splitting to two independent rack units. We load IK Multimedia's X-GEAR shell program and call up AmpliTube: Hendrix Edition's **British Lead S100**.



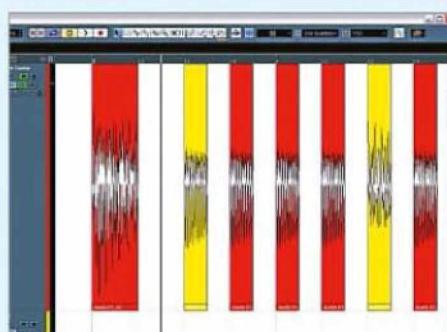
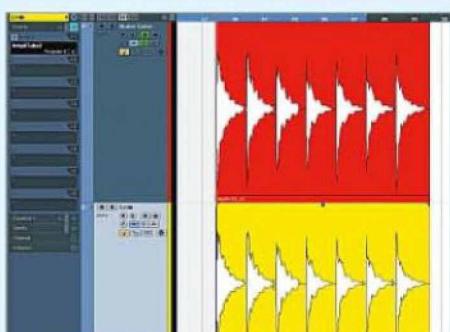
4 > Next, we look to add some modulation to our Fender tone to contrast nicely with the faster effect of the Uni-V. In the **Stomp** screen, select the **Fender Phaser**, switch **BPM Sync** on and the **Frequency** to **0.45Hz** to give us a very slow sweep.



5 > Now take a look at the **Rack** screen. The first unit we want to use is the Hendrix Edition's **Parametric EQ**, to cut some of the mid-range. Add the **Tube Compressor** to drive the signal and provide some warmth, too. Finally, go for AmpliTube 2's **Digital Reverb**, with a short **Decay Time** and a **Mix of 15%**.

6 > For the second part of the split, we call up AmpliTube Fender's **Tap Echo**. Set this to a short **Time**, with the **Feedback** way up for lots of repeats. Turn the **Echo Level** down, though, so that the fast repeats don't interfere with the main part too much. (Audio: **Signal_Path_Options**)

> Step by step

[Chopped chords](#)

1 > Let's create some unusual chopped guitar sounds. Start by recording long sustained chords at two different pitches. Don't worry about whether they're in time or not, as we just need them to ring for a long time without tailing off too soon. Our first track features an A chord, the second uses C[#].

2 > Next, we change Cubase's **Snap** setting to enable us to cut 32nd-note chunks out of our sustained A chord. This will give a a stuttering effect. It's worth cutting the audio up so that the first note is slightly longer than the others, too, as this will give the part more impact.

3 > Repeat the last step with the C[#] chord, then mix the two parts together to create a jarring sound that would be impossible for a real guitarist to reproduce. To enhance the effect, you can rapidly pan the riff from hard left to hard right, producing a sweeping sound. (Audio: **Stutter_guitar**)



The cm guide to FL Studio 9

We explore the major new features of Image-Line's DAW, getting to grips with sidechaining, volatile linking and all of the new instruments...

> FL Studio has come a very long way from its humble beginnings as the FruityLoops step sequencer and virtual drum machine, developing into a complete DAW with comprehensive plug-in support, as well as the ability to record and edit audio and MIDI.

A side effect of this evolution is that, while the software still centres on the step sequencer at its core, it's more complex than ever. Boasting an array of features far too long to list, FL Studio 9 is a beast. So to help you get the most from this versatile DAW, we're going to look at our choice of the powerful new features that have been added since version 8.

A lot of these improvements take the form of workflow enhancements and new ways to handle and process sounds. Just about every DAW has seen the addition of

built-in sidechain routing in the last couple of years, and FL Studio now has this facility without the need for specialised third-party plug-ins. Sidechain routing enables more than one channel to be routed to a plug-in effect, which makes it possible to trigger said effect - usually a compressor - using the signal source from a channel other than the one it's actually compressing. Using this, you could, for example, temporarily reduce the level of a synth when a kick drum plays, which is a key production technique for creating pumping dance music that can also be used as a subtler mixing tool in a variety of other styles.

Vocodex, the new vocoder, will delight fans of Fruity Vocoder, as it offers the same superb sound but adds more parameters, so that you can tweak the effect to perfection.

FL Studio 9's volatile linking is a handy tool that enables you to instantly assign one or two MIDI controls to the last couple of parameters that you tweaked. With this, you can quickly adjust a multiple plug-in parameters using hardware controls without having to dig around in an unfriendly MIDI learn system.

Another time-saving addition is the Riff Machine, which combines the existing FL Studio 8 Piano Roll tools into a single MIDI generator, so that you can quickly create complex MIDI parts with the turn of a few knobs.

Once we've covered all of that, we'll go on to create a mini-project in FL Studio 9, so even if you're a newcomer to the software, you should be able to pick up the basics. The demo's on the DVD, so get it installed if you don't already own the full version, and let's begin... **cm**

"While the software still centres on the step sequencer at its core, it's more complex than ever"

> Step by step Sidechain routing



1 > Starting with the default FL Studio project, create a four-to-the-floor kick drum part, as we have here. This is going to be our sidechain trigger. So that we can hear the effect of the sidechain properly, turn off the limiter on the master channel by clicking this track's **FX** button.



2 > Next we need something to compress, so right-click the top sample in the step sequencer and select **Insert>Sytrus**. Right-click the **Sytrus** slot and select **Piano Roll** to bring up the MIDI Grid Editor. Enter a one-bar-long note, as shown.



3 > Currently, the drum sounds in the step sequencer are routed to the first four channels, so change the **FX** setting in Sytrus' channel inspector to **5**. Next we need to route the kick to channel 5's sidechain input...



4 > Select **Insert 1** (the kick drum channel track) in the Mixer and click the send enable button on channel 5, the Sytrus channel. On playback the kick drum will be twice as loud, because it's playing through two channels. To stop hearing the kick through the master, click the enable send button on the master channel, too.



5 > Select channel 5 and set the first Insert FX to **Fruity Limiter**. Change its mode to **Compressor** by pressing the button at the bottom of the GUI. Set the **Sidechain** to **1**, then lower the **Threshold** and raise the **Ratio**. You should hear the effect of the sidechain compression, with the pad ducking out on every beat.



6 > Adjusting the **Release** button on the Fruity Limiter gives you a lazier or tighter sound. To stop hearing the kick drum, select channel 1 again and turn down the send knob on channel 5. If you want to bring the kick back into the mix, reactivate the channel 1 to master send, as shown here.

> Step by step Volatile linking



1 > Volatile links automatically assign a specific MIDI control to the last knob or slider moved with the mouse. They're 'volatile' because they continuously update to the last touched control - they persist across projects and FL Studio sessions, too. Start by making sure that your MIDI controller is **Enabled** in FL Studio's **Options>MIDI Settings** window.



2 > Tweak an FL Studio parameter or plug-in with your mouse - simply clicking on the control isn't enough; you'll actually have to move it slightly. Next, select **Tools>Last Tweaked>Override Volatile Link**. A Generic link settings window will appear. Adjust the MIDI control that you want to use.



3 > The window will disappear and adjusting the MIDI controller will move the selected parameter. Tweak another parameter and the MIDI control will affect that instead. You can also set up a **Next To Last Tweaked** controller in the same way, giving you two volatile controls to play with.

> Step by step Using Riff Machine



1 > FL Studio's new Riff Machine is designed to help you write MIDI parts quickly and easily. It's based on FL Studio 8's Piano Roll tools, so you might find some of the functions familiar. Start with the default project and create a new instrument - we're using SimSynth. Bring up the Piano Roll editor and select Tools>Riff Machine.

2 > The Riff Machine consists of stages steps, each of which affects its MIDI output in a different way. By default, Riff Machine will create a steady 1/16th note riff. It's not particularly interesting, but we can soon tweak it into something prettier. Currently, the first step, Progression is selected. Click Random to generate a new pattern.

3 > To begin again, simply click the Reset button. Note that the Throw Dice and Start Over buttons randomise and reset all steps respectively, rather than adjusting the currently selected one. Also, you can adjust the Length of the sequence in bars using the setting in the bottom left-hand corner of the window.



4 > To get more specific results, activate the Show Details button. Here you can load a new pattern or 'score' from those provided, as well as set the specific riff parameters, and use the Time Multiplicator knob to affect the how quickly the note progression occurs. The Random button affects the pattern and Time Multiplicator, too.

5 > The Options controls won't have an effect if the chosen score has a default velocity. If you're processing a pre-programmed MIDI file (which can be done by activating the Work On Existing Score option in the bottom right-hand corner of the window), the velocity settings will result in a blend of the original and the chosen score.

6 > The subsequent panels work in a similar manner, each with options for tweaking the MIDI. Chord and Arp are self-explanatory, Mirror flips the melody horizontally and/or vertically, Levels humanises the velocities, Articulation affects the note length, Groove subtly changes the timing and velocity, and Fit restricts and transposes the note range to blend in with any existing parts.

Big fame hunting

Jonas Altberg, AKA Basshunter, is one of FL Studio's most famous users, with a string of dance hits and a Number 1 album under his belt. We asked him about his experiences using the software...

cm How did you first get into using FL Studio, and which version was it?

AJ "A friend of mine showed me FruityLoops when I visited his place for a LAN party, and because I'm mainly a PC user, it was the perfect music program for me."

"I started using FruityLoops 3, as far as I can remember - that was the first time I tried any kind of music software."

cm What do you make of the new features in FL Studio 9?

AJ "I haven't installed it yet, as I'm on tour around 320 days a year, but when I find time for it, I'll definitely try it out. The major changes included in previous updates have all been very good, and as far as I know after reading about it, the same goes for version 9 as well."

cm What synths do you use?

AJ "I'm totally in love with V-Station and Z3TA+. I just can't stop using them! I've got a bunch of

new plug-ins that I want to explore, too, but lack of time holds me back."

cm Do you actually finish your tracks in FL Studio or do you export everything to another piece of software at the end?

AJ "I produce all the music in FL Studio, bounce each instrument and percussion sound onto separate tracks, then import them to Logic. There, I add and treat the vocals, before I mix everything down. Sometimes I use a Pro Tools system in one of the bigger studios, but only for singles releases."

cm Do you have any tips for FL Studio users?

AJ "Well, I have to admit that I don't really know that much, even after using it for seven years. To be honest, I haven't improved my way of producing for three years. I guess it's because I spend so few days in the studio, and when I do, I'm under a lot of stress and pressure, which leaves no time for exploring

> Step by step Making a robot-style effect with Vocoder



1 > Vocoder is FL Studio 9's new vocoder effect, which offers greater functionality than the existing Fruity Vocoder. These processors are commonly used to create robotic voice sounds, amongst other effects. To get the classic robot voice, create a new project and start by labelling tracks 1 and 2 **Modulator** and **Vocoder** respectively.

2 > We use three elements to create this effect: a synthesiser part (the carrier), the vocal articulation (the modulator) and the processing effect (the vocoder). Select the **Vocoder** channel and add Vocoder as an Insert effect. Vocoder has separate inputs for the carrier and modulator, which need to be routed correctly before we can begin...

3 > Select the **Modulator** track, then right-click on the Vocoder Mixer track Send switch. Select **Sidechain to this track**, then deselect the send to master track switch, which will stop the modulator channel being routed directly to the main output - we only want it to be heard through the vocoder.



4 > Delete the existing sampler pattern, create a Sytrus track in the step sequencer and route it to track 2 in Channel Settings. Click the arrow in the top left-hand corner of the Sytrus window and select **Presets»Vocoder Carriers»Supersaw**. Go to the Piano Roll and create a single, bar-long note.

5 > Now create an audio clip and load a vocal sample - we're using **AnytimeAnywhere.wav** from the **Tutorial Files/FL Studio 9** folder on the **cm** DVD. Trigger the sample at the start of the bar and route it to track 1, the modulator. Upon playback, you'll hear the classic robot voice effect.

6 > Vocoder has plenty of tweakable parameters. To get a clear, intelligible voice effect, adjust the number of **Bands** to **100** and set the bandwidth (shown in green) to max. Turn off **Draft** mode in the top right-hand corner for higher quality, and reduce the **Release** time to stop syllables blurring together.

and trying out new things. If you had a look at one of my FLP project files, you'd probably laugh. But it's not about how you produce the track elements, as long as the result is good."

cm What advice do you have for **cm** readers who are new to music production?

AJ "Don't make things overly complicated! Find your own style and identity - you don't need to be a genius to produce a hit, you just need a good idea and some luck. My new album, *Bass Generation*, is a good example, as some of the songs are produced in very

"You don't need to be a genius to produce a hit, you just need a good idea and some luck"

different ways, but you can hear that it's still a Basshunter track straight away. You have to end up working with the right people for you, too - people that have a good network for the kind of music you produce, and that's probably as tricky as writing and producing the hit in the first place.

"There are a lot of dirty fingers out there, so don't sign the first contract that you see - make sure you have a lawyer look at it first!"

"Some people are probably curious to know if music is the same now that it's actually my career. I must say that it is different - not in a negative way, but I can't play around and produce something just for fun as much as I used to. This is because every time you do something just for fun, the result is usually really good, so make sure that you keep producing and writing stuff without being too serious as long as you can!"
www.basshunter.se

> Step by step Creating a simple track with FL Studio 9's new instruments and features



1 > Create a new project at a **Tempo** of **125bpm**. Delete the sampler instruments in the step sequencer, and create a DrumSynth by right-clicking the instrument slot and selecting **Insert»Fruity DrumSynth Live**. Right-click the **DrumSynth** instrument slot and select **Piano Roll** to bring up the MIDI editor. By default, the keyboard interface shows the drum sounds on each of the keys.

2 > While this view makes finding specific sounds easy when programming a beat, locating them in the DrumLive editor is a little trickier. Being able to see the actual MIDI note makes it easier, though, so change over to the larger view by clicking the bigger of the two keyboard icons near the top left-hand corner of the window. Copy the beat shown here.

3 > To edit the drum sounds, click the **DrumSynth** slot in the step sequencer, bringing up the instrument's interface. Select **909 Snare (B3)** and copy the oscillator frequency settings shown used here - this turns our traditional snare into an abstract woodblock-style sound.



4 > Turn the **Volume** level of the snare sound to **60%**, then select **909 Kick L (G3)**. Turn the Osc1 envelope **Decay time** down to **200** for a shorter, punchier kick sound. Next, choose **808 Maracas (G#2)** and set its **Volume** level to **60%**. Change the instrument's **FX** out in the Channel Settings window to **1**.

5 > In the browser menu on the left, open **Plugin Presets»Generators»SimSynth** and drag **BassDeepSq** onto the empty instrument slot in the step sequencer. Copy the settings shown here to get a modulated filter cutoff effect, then sequence a note lasting for the whole bar on G4 to trigger the sound.

6 > Ensure that the DrumSynth and SimSynth are routed to Mixer channels **1** and **2** respectively. Route the DrumSynth track to the SimSynth's sidechain input, and add a Fruity Limiter as an Insert on the SimSynth channel. Copy the Fruity Limiter settings shown here to duck out the bass slightly whenever the kick drum plays.



7 > Let's get some minimal atmospherics in the place. Add another instrument this time the Wasp XP. Select the **Tubular Bells** patch and copy the Piano Roll pattern shown here. This sound could do with some reverb, so add a Fruity Delay 2 as an Insert on the Wasp XP channel and set the **Time** to **6.00**.

8 > The step sequencer is great for creating a beat, but it's easier to use the playlist view for arranging. Bring this up by activating it in the **View** menu or pressing **F5**. FL Studio's playlist works a bit differently to most sequencers. We want to be able to sequence each element of the song individually, so in the playlist menu, select **Playlist Options»Pattern»Split By Channel**.

9 > It doesn't matter which playlist track you place the elements on, as they'll always trigger the correct instrument. For example, select **DrumSynth** from the top of the playlist and draw it onto the first eight bars. Then select **BassDeepSq** and draw it in from bar 9. Finally, draw in **Tubular Bells** from bar 5. Using this technique, you can quickly create an entire arrangement with a few clicks.

Traditional tracking

We're going back to the basics of trackers, performing commands that the software was born to do...



> In judging conventional DAWs against trackers, there are, of course, positives and negatives on both sides. However, in this tutorial, we'll be focusing on the things that trackers truly excel at.

First, we'll make a tonal sound using the Glide to Note command (O5xx, where xx is the glide speed between 00 and FF). This works much like a pitch bend, except that the desired end pitches are placed as normal notes, and it's the glide speed that determines how quickly they're reached after triggering.

Secondly, we'll be using the oldest effect in the book, the Set Volume command (0Cxx, where xx is the volume, between 00 and FF again). Known in Renoise as 'Set pre-fader track volume', this determines the level of whatever is playing in that track. For our needs, we'll be hard-switching between volume extremes of 00 and FF to create a trance-like gate.

We'll finish off by throwing in a quick drum loop, using the Trigger Sample Offset command (09xx, where xx is the offset value of the sample to be triggered), in order to trigger the loop's

snare and hi-hats. The offset values 00 and FF cover the entire range of a sample, and, as the hi-hat is a quarter way through and the snare half way through the sample, we can use the commands 940 and 980 to trigger each of these sounds respectively.

Right, let's get started. Load up Renoise, then set the tempo of your song to **130bpm** and the **LPB** to **08**. The tonal sample that we'll be using currently has slow fades at the beginning and end, which we'll first need to get rid of by trimming it in the **Sample Editor.cm**

>Step by step The basics of trackers



1 > Load **Strung_C2.wav** into Instrument slot 00, highlight the fade-in portion and press **Delete**. Do the same for the fade-out section. Click **Instrument Settings** and choose **Loop»Ping Pong**. Load **DrumLoop.wav** into Instrument slot 02, **Sync** the sample to **16 lines** and select **Loop»Forward** under the **Instrument Settings** menu. (Continue or load **CM_trackersTutorial_18a**)



2 > Choose the first instrument and enter four low to mid-range pitches every 16 lines on Track 01. Now use the arrow keys to scroll to the effects column and enter a series of Glide to Note commands. Audition the pattern and adjust the speed of each glide to taste - be aware that this will often need to be quicker for larger note intervals. (Continue or load **CM_trackersTutorial_18b**)



3 > Drag Filter 3, LFO and Send Devices onto Track 01 from the Track DSP list. Choose the **LowShelf** setting on **Filter 3**, then raise the **Q** and **Gain**. Now select **Filter 3** and **Cutoff** as the two **Destinations** for the LFO Device. We'll perform the volume gating on the Send Track, so that we can use the same effect on other sounds. (Continue or load **CM_trackersTutorial_18c**)



4 > Now go to the S01 send track and enter in a series of Set Volume commands, using **FF** to pass the sound through at max volume and **00** to shut it off. Where you place these commands will dictate the rhythm. Add a Delay Track DSP onto the same track with a **Line Sync** of **6** for both channels. (Continue or load **CM_trackersTutorial_18d**)



5 > Select the drum instrument and, on track 02, tap in a rhythm for the kicks, then add any extra hi-hats and snares that you want, using Trigger Sample Offset commands **940** and **980** respectively. Add a Compressor to the drum track, lower the **Threshold** and raise the **Ratio** and **Makeup** to give it more life. (Continue or load **CM_trackersTutorial_18e**)



6 > Finally, duplicate our synth track with **Ctrl/Cmnd+Alt+D** and transpose the notes up a few octaves (**Shift+F11/F12** for octave down/up). This time, change Filter 3 over to **HighShelf** and alter the LFO Device's **Frequency** slightly, as we have here. Just for good measure, add another LFO Device to automate this track's **Panning** parameter.

Minor issues

We delve deeper into minor keys and scales, and explore some of the more contentious elements of music theory

> Last time, we raised the question of what it is that makes up a minor key progression (as opposed to one that just happens to include a few minor chords). We discussed the natural minor scale, as well as the modification that permits a major chord on the dominant, which can be heard at the beginning of this month's MIDI file. You'll also hear a melodic minor scale, enabling the use of both major and minor sixths, plus the range of chords that come from this.

This month, we're going to focus on a few additional notes, chords and progressions that create archetypal minor key sounds.

Major or minor sixth?

One of the fluid notes in the minor scale is the sixth degree – in Dorian and ascending melodic minor scales, it's major (A in C minor, our key of the month), but it's lowered in natural minor and descending melodic minor (A^b). It's one of the governor notes in minor contexts, then.

With a tonic minor chord (C minor), the sixth most often tends to be major, giving rise to Cm6 (C E^b G A – implying melodic minor, as in the original Gershwin version of *Summertime*) or Cm13 (implying Dorian, so think Miles Davis circa 1959). The 13th is the same note as the sixth, just in the higher octave, but the essential difference is that the 13th chord implies the potential additional presence of seventh, ninth and 11th (C E^b G B^b D F A, in this context). See

1: A sixth and a 13th are the same note, but the chords are very different

2: Flat sixth in the home scale is a flat nine in chord V and a flat five in chord II

3: The basic 'sharp nine' chord, and a common variant with a raised fifth

Fig 1 for more on this. If it confuses you, though, listen to the MIDI file. The flat sixth, when added to a tonic minor chord, sounds a bit weird, which is probably why they used it for *The X Files* theme tune...

The major sixth also gives a major chord IV (F major) and minor chord on the second degree

(D minor), as well as the possibility of a major seventh chord built on the flat seven (B^b).

The flat sixth note comes into its own with dominant chords G7-9 (G B D F A^b), minor chord IV (F A^b C E^b) and tragic sounding chord II Dm7-5 (D F A^b C). See **Fig 2** for the notation. Note that they all have A^b in them, which makes a strong contrast with any other chord that has A natural.

Melodic considerations

If you write a progression that chromatically alters the sixth, it's good to keep the changing note in the same 'voice' (see boxout for more). In fact, whenever your chord progression features a chromatic change, it's worth considering whether you'd like to voice the chords so that the changing note stays in the same voice (listen to examples in the MIDI file).

You can play with having a variable sixth step by sometimes including a major chord IV and sometimes a minor (F to Fm) – likewise, the chord on the second step can be a regular minor seventh or have its fifth flattened (Dm7 or D^b7).

The blues

One final (and very characteristic) sound is the presence of both a major and minor third on the dominant chord (G7). Convention dictates that this dominant chord should have a major third (B). Modal progressions often favour the softer minor chord in the dominant place (Gm7), but you can have both versions, so the third note is present in the chord, more often voiced with the minor third on top and the major third embedded somewhere down in the middle of the chord (**Fig 3**). Note that the minor third is usually called a sharp nine, though. **cm**

Voices, real and virtual

Musicians often talk about 'voicing' a chord, even when instruments will be used exclusively. This is a very old habit of considering how a human voice would be deployed on a progression, even though you're not actually planning to use it. You can't, for example, jump from one unrelated note to another, as voices must have their parts made singable. This way of thinking (not the only one, by any means) gives rise to smooth 'voice-leading' (there, we're using that word again) between one chord and the next, which sounds very musical and familiar because so many composers use it. It's useful to consider that the more

way-out a chord progression is, the smoother the voicing needs to be.

In the example here, a C minor chord can move directly to an F major chord, both in root position, and it doesn't sound absolutely rubbish. However, when you invert one of the chords, so that the notes in successive chords move as little as possible (or don't move in the case of the lowest voice), a smoother and more sophisticated effect is produced. Extend this idea into the more chromatic case of G7-9 resolving into Cm6 (chromatic change A^b to A) and you can hear the basis of some quite advanced voicings, as used by jazz arrangers.

The first example works but is crude; the second one is smoother; and the third is, well, really quite clever



Avoiding gridlock



Our resident rhythmical renegade encourages you to get off the grid, then back on it, then... oh, just read the feature, would ya?

rachMiel



rachMiel has spent the better part of a decade studying composition in America and Germany. A recovering atonalist,

his musical influences range from Frank Zappa, Karlheinz Stockhausen and North Indian classical drumming to 60s pop, horror movie soundtracks, avant electronica and, above all, silence.

"It might take you a while, but eventually, you'll find a beat that works with your beatlessness"

> **Rhythm is the source of one of the deepest and most intractable aesthetic divides in music. Most listeners are drawn to a rhythmic grid, which is based on metronomic pulses: 120bpm equals one pulse every 0.5 seconds, four pulses per 4/4 bar, two quavers per beat, four semiquavers and so on. Exceptions occur - syncopation, shuffle, grace notes or appoggiaturas - but the grid is still there.**

Some listeners prefer rhythmic gridlessness, wherein sonic events (notes, chords, runs, etc) don't sync to any regular pulse. Anti-gridders, though in the minority, tend to be passionate about their gridlessness, covering their ears whenever they encounter metronomically driven meters, subdivisions and 4/4 beats, for example. Pro-gridders shake their heads when faced with gridless music, such as free jazz, improvisation, 12-tone serialism and so on.

To grid or not to grid?

I had the fortune of growing up with one foot in each camp. 60s classic pop/rock and Bach kept

me gridded; electronic sci-fi soundtracks and free jazz kept me off the grid. Later, formal composition study moved me towards pure gridlessness; and recently, electronica production has nudged me back towards the grid. The rhythmic grid

has plenty to offer in terms of emotional and intellectual satisfaction - ditto for the absence of a grid. They are two distinct and unique aural pleasures that can complement each other beautifully, like coffee and cream.

However, the two approaches seem incompatible. Music can be either beat-driven

(think 4/4 pop) or beat-free (improvised noise), right? Alas, for the most part, the answer is yes. But it doesn't always have to be that way. What about a gridded/gridless hybrid? For example, how about having one layer on the grid, such as grooved drums and bass, and a second layer gridless, squealing electric guitar. Or the other way around, with the guitar banging out power chords on quavers and the drums and bass improvising freeform DnB-ish counterpoint.

Hybrid music

So how do you go about making a gridded/gridless hybrid? Well, let's say you're more comfortable working on grid. Begin by laying down a solid beat - something that grooves, yet feels open-ended enough to coexist happily with a gridless counterpart. Set your groove to loop endlessly and listen good and hard, letting it crawl into your body. Pick up an instrument, digital or analogue, and start to improvise. Stay on grid, synced to the groove, for as long as you need, before gradually, lovingly, letting go of your inner metronome, allowing time to become fluid. Find points of rhythmic coincidence with the groove, such as a flurry of activity around a major downbeat, an echo of a gridded rhythm - that kind of thing. Above all, get the gridded and gridless layers to talk to each other.

If you're an off-gridder, lay down something compellingly gridless. Use whatever approach works - improvise on an instrument, sing (groan, ululate, shriek), use a de/re-sampler to mutate an existing track, or play a Reaktor ensemble to generate a cloud of abstract sound. When you're done, loop the passage and audition different grooves underneath it. It might take you a while, but eventually, you'll find a beat that works with your beatlessness. cm

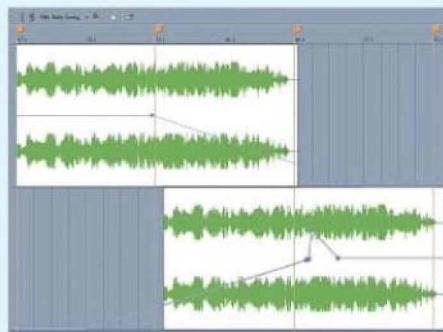
The NYC downtown/uptown schism

Back in the mid-70s, we had a set of terms to describe a similar musical-cultural divide: downtown and uptown. Just like downtown New York, its music was iconoclastic, experimental and anti-academic, often created by those with no formal training. Uptown music, on the other hand, was more learned, academic and staid, made almost exclusively by students and professors enrolled in uptown college music programs.

One of the most striking differences was the rhythm. Downtown music was often gridded - Glass, Reich and Riley are prime examples. Uptown music tended to thwart, mutate or altogether ignore the grid - championed by 12-tone serialists like Milton Babbitt, Charles Wuorinen and Elliott Carter.

At its height, the downtown/uptown schism was quite nasty. Downtowners had little patience for what they perceived as

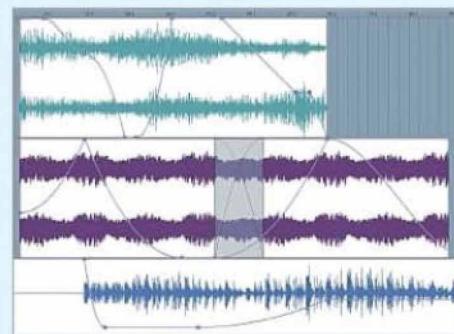
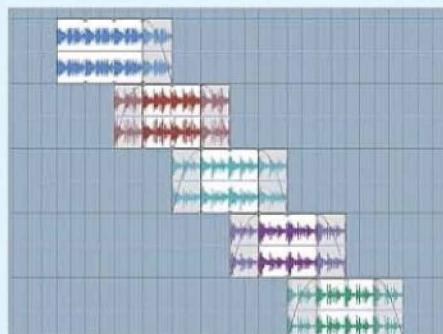
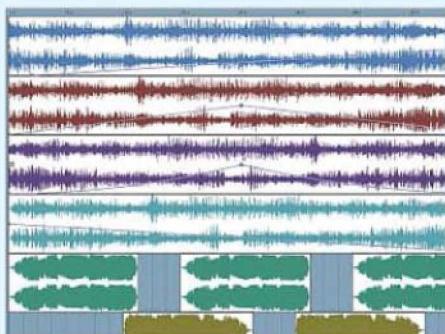
effete academic uptown formalism, whereas uptowners regarded downtown music as primitive, amateurish and uninteresting. Fortunately, the boundaries eventually softened and, in some cases, disappeared altogether. Nowadays it's not uncommon to see uptown-ish students collaborating with self-taught downtowners. It's the best of both worlds - extremely compelling music underpinned by solid formal foundation.

>Step by step
The gridless grid

1 > I've created two complementary examples to demonstrate gridded/gridless hybrids. Here, in a short piece, *Organisch*, the groove layer (percussion, bass and pad tracks, as shown above) is gridded, while the melodic layer is gridless. Check out the excerpt (up to the pause some three-quarters of the way through) of the gridded groove. (Audio on the disc: **Organisch_gridded.wav**)

2 > The gridless section of *Organisch* is a mix of several different sub-layers, all blissfully off the grid - processed voice, percussion, warbling quasi-Theremin and more. I needed these layers to be about one and a half times longer than their actual length, so I faded in a second copy of each about halfway through. You can listen to the gridless result on the disc. (Audio: **Organisch_gridless.wav**)

3 > And here's the final mixed and mastered version: **Organisch.wav**. Listen carefully to the interplay of gridded and gridless. Does it work for you? (Trust your gut on this.) Does the opening, gridded section set up an expectation that the gridless melodic layer then thwarts? And do the gridded and gridless complement each other nicely?



4 > In *Organisch*, the groove is gridded and the melodic layer is gridless. In this second example, *Palindromedary*, I've taken the opposite approach - the groove is gridless and the melody is gridded. It might sound strange to refer to a groove as gridless, but I think you'll understand what I mean when you check out the results on the disc. (Audio: **Palindromedary_gridless.wav**)

5 > In dramatic contrast to the dark gridless groove, with its sub-bass drone and taiko drum vortex, the foreground layer (a palindromic melody) is bright, breezy and reassuringly gridded: **Palindromedary_gridded.wav**. To make it in this way, I send the same short passage through a set of seven different CamelSpace filter delay patches and crossfade the results into one another.

6 > Here's *Palindromedary*, fully mixed and mastered: **Palindromedary.wav**. The three layers shown above are submixes: gridless drums (top), bass drone (middle) and gridded melody (bottom). I often work with submixes, because I love exerting precise control over the levels of a piece's main layers, as you can see by the roller-coaster-esque envelope curves.

Experimentalist's corner:
Navigating the gridded/gridless continuum

The solution I came up with for bridging the gridded/gridless divide is rather simplistic: pitting pure grid against pure non-grid. It has the advantage of getting right to the point, but lacks subtlety and finesse. Far more interesting (and difficult to realise) is an approach that regards pure griddedness and pure gridlessness as extreme points on a continuum. In visual terms, rather than just working with black and white, one

would work with black, white and the infinite shades of grey in-between.

The composer would navigate between different degrees of gridded/gridlessness. A sax solo might move from strictly gridded, to somewhat gridless, to strongly gridless and back again. Transitions between points in the gridded/gridless continuum could be gradual, abrupt or even instantaneous. A type of rhythmic polyphony could be

achieved by having different instruments take different routes along the gridded/gridless continuum. As the sax moved from gridded to gridless and back to gridded, a piano might move from gridded to gridless, a bass from gridless to gridded, and drums from gridless to gridded, then back to gridless. How would it sound? Free jazz-ish? Charles Ives-ian? Extremely random? You'll just have to try it and find out for yourself!



LFO layering

Synth sculptor Scot Solida shows you how to create rhythmical layers using a few humble low frequency oscillators

> **LFOs used to be simple affairs. Some of the first synthesisers I ever owned had a single LFO, with only the modulation wheel determining the amount of it applied. Worse still, the choice of LFO waveforms on those early synths was extremely limited, to say the least. If you were lucky, you'd get a square wave in addition to a standard sine, but many instruments back then only had the latter.**

Still, there were a few models with more complex offerings. I can still remember my

elation upon discovering that my beloved Yamaha CS40m provided an LFO with multiple waveforms, and that these could be routed to loads of destinations. Better yet, a different LFO waveform could be selected for each of those destinations, which enabled me to modulate the amplitude with, say, a downward sawtooth, while simultaneously modulating the oscillator pitch with a carefully-tuned square, as well as sending a sample and hold waveform to the filter cutoff. This sort of flexibility enabled me to create very complex, pseudo-sequenced

rhythm patches that I still find useful today.

These days, thankfully, I can call upon any number of instruments with LFO sections, all of which put my beloved CS40m to shame. Some modern soft synths include LFOs that are actually, to all intents and purposes, simple sequencers. By tapping into all of this power, we can create rhythmic sounds that sputter and pop, or develop undulating organic textures that wiggle and writhe. And if that sounds cool, just wait until you start piling them on top of each other! **cm**

>Step by step

LFO layering



1 > You might think that only expensive synthesisers would offer multiple and flexible LFOs, but there are in fact a number of free synths that fit the bill very nicely indeed. One of them is the **cm** Studio's **ZebraCM**, by u-he. Fire it up in your host of choice. We'll use the default patch as a starting point.

2 > We don't have the space (or LFOs) to cover the sort of deeply modulated sound that I described in the text above, but we can make a good start with ZebraCM's dual-LFO structure. You can then apply what you learn to more complex patches of your own. To start off, locate the LFO section and choose **1/8** as the **Sync** value for LFO1.

3 > ZebraCM is still outputting the default sound, because our LFO isn't assigned to anything yet. If you look at the description of my favourite CS40m patch above, you'll note that I assigned a sawtooth wave from the LFO to the amplitude of the oscillators. Currently, the waveform for LFO1 is a sine, so select the **Saw Down** waveform instead.



4 > Let's patch our LFO to the Amplitude of Oscillator2 - we'll worry about Oscillator1 in a moment. Find the **Volume** knob for Oscillator2 and turn it all the way down. In fact, do the same for Oscillator1, so that we can better hear what we're doing to our patch.

5 > Now, return your attention to Oscillator2 - note that there's an unassigned modulation amount knob directly beneath its Volume knob. Click on this unassigned knob to reveal a list of possible modulation sources. **LFO1** will be among the available options, which you should select as the mod source.

6 > You'll no doubt have noticed that our patch has been rendered silent ever since we turned down the individual Oscillator Volume knobs. Having assigned our LFO as a mod source for the Volume of Osc2, it will know act as an automatic volume control - at least, it will once we've performed a couple more tweaks. Turn the newly-assigned **LFO1** knob fully up.

BUSTING JARGON**LFO**

You ought to know this one by now, but if you're just joining us for the first time, it stands for Low Frequency Oscillator, and that's precisely what it is: an oscillator that's been slowed down below the audible range and employed as a modulation source. Many synths have oscillators that can double as LFOs simply by reducing their frequency.

RAMP WAVE

Really, this is just another name for a sawtooth wave in reverse. Most sawtooth waves are designed to ascend gradually, then drop sharply. However, some rise sharply and gradually fade. Some designers call this last variation a 'ramp', whereas others call it a sawtooth wave and vice-versa.

PRO TIPS**SEQUENCER AS LFO**

Though we're discussing the reverse in this instalment of *Synth Essentials*, long-time readers will remember that we've also previously discussed using a sequencer as an ersatz LFO, with a fully customisable waveform. It's even cooler if you can control the sequencer rate with another modulation source, too.

QUANTISING

If you've ever tried to use a sample and hold function to modulate pitch, then you'll know that the results are invariably dissonant. The same is often true when using step-LFOs, just as we are in the walkthrough below. However, many modular systems offer so-called 'quantiser' modules that will bump the incoming voltages to the nearest half step. You might be able to achieve the same thing with a pitch correction plug-in, such as Auto-Tune or GSnap.

Scot Solidar

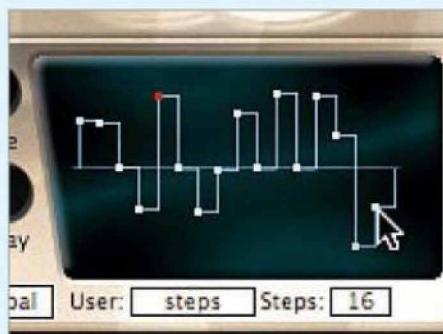
Scot bought his first synth over a quarter of a century ago. A synthesist, sound designer and audio engineer of international repute, he's provided factory presets for many of the music software industry's most acclaimed synths, samplers and drum machines, not to mention the CM Studio. On rare occasions, he manages to find time to make records for Beta-lactam Ring Records under the name Christus and the Cosmonauts.



7 > Still no sound. That's because the modulation amount is tied to the mod wheel. Return to the LFO1 section and turn the **ModWhl** knob all the way down. Now, hold a note on your MIDI keyboard. There you go – a steady eighth-note pulse is now audible, which fades gradually the longer the note is held.

8 > There's still a snag, however. You may have noticed that our LFO isn't locked to the note-on command. We can fix that by changing the value of the LFO's **Restart** parameter. Click on it and choose **Gate** as the value, which will cause the LFO's waveform cycle to reset with each new note that you play.

9 > I'm not nuts about how the amplitude envelope decays to a low sustain state, so crank the **Sustain** for Envelope1 all the way up. Now, move on to LFO2 and select it by clicking its tab in the LFO section. Again, set the **Restart** value to **Gate**, but this time choose **1/16** as the **Sync** value and **User** as the **Waveform**.



10 > This User waveform is one of ZebraCM's strongest points. We're going to employ it to modulate the filter cutoff. Look to the Filter section, find the unassigned modulation knob to the lower-left of the **Cutoff**, click on it and assign it to **LFO2**. Turn the Cutoff up about half way and the newly-assigned knob all the way up.

11 > We need to create a waveform for our LFO. This is done by clicking and dragging the 'nodes' in the waveform display. Try to create a shape like the one I've made here. It doesn't have to be exact for now. Upon holding a note, can you hear the LFOs modulating both the filter and amplitude of Osc2 independently?

12 > Let's finally assign our new LFO to modulate the **Volume**, **Wave** and even the **Tune** of Osc1. Assign all of their mod source knobs to **LFO2** and crank 'em right up. If you like, fine-tune the LFO2 Wave to play proper 'notes' with Osc1's **Tune** parameter. Also, try adding a bit of **Delay1** as a final touch.

'CLOUD BUSTING

cm takes a look at the online phenomenon that is SoundCloud, speaks to the site's co-founder and shows you how to get involved

> There are plenty of audio hosting and distribution sites on the internet, but one in particular is attracting huge numbers of producers, remixers, record labels and A&R scouts at the moment, and making the headlines because of it. SoundCloud is a music streaming and distribution site featuring a cutting-edge user interface and plenty of well-realised functionality that makes it an extremely exciting resource for the computer musician.

The site's primary purpose is waveform display-based playback, which enables listeners to comment on the music using time-linked tags. Your music can be shared privately or publicly (as well as in groups), embedded into other websites, downloaded, streamed and linked to retail sites. Songs are also given simple URLs for sites that don't support HTML.

SoundCloud's features - particularly instant streaming - have won it plenty of high-profile users, including Beck, Moby, Talvin Singh, Kid 606, Jazanova, Si Begg and Blu Mar Ten, and currently there are over 250,000 subscribers.

SoundCloud's developers stress that it's not intended to rival social networking sites, and while some features cross over, they aren't the site's primary focus. Social networks like Facebook have taken flak recently for their controversial terms of service and what they could mean for user content, but SoundCloud say theirs is "a platform and tool for others creating, collaborating, promoting and distributing music. We do not interfere or in any way make claims on your or your artists' rights".

In this guide, we'll take a look at what SoundCloud has to offer and its potential benefits for the music producer, then show you how to sign up and get involved.

Turn on, tune in

The sign-up process is simple, and while there are some limitations with the free account (most notably, you can only upload five tracks a

month), the fundamental usage of the site is unhindered. Once you've signed up, the core of the site is your Dashboard. Here you get updates on other users that you're following, what they've uploaded, what's been commented on and what people are favouring.

The key feature of SoundCloud is, of course, the uploading of your music, which can then be streamed or downloaded by other users, commented on and shared, and is displayed using a visual waveform. You can receive music via your DropBox (a direct link to your inbox) and send your tracks to others via their DropBoxes, amongst other methods. The uploading itself couldn't be simpler, and unlike MySpace and other platforms, SoundCloud not only caters for MP3 (at any bit rate), but also WAV, AIFF (16 to 32-bit at just about any sample rate), FLAC and OGG. With streaming playback

usage, a plain-english URL is also provided.

Another unique feature of SoundCloud is the facility to make timed comments that tag your feedback to a specific moment in the track, thus enabling you to be very specific in what you say. Comments can be replied to and are presented in standard threaded format. As well as simply encouraging dialogue on any given track, rather than a disjointed set of statements, it also aids online collaboration, with such comments leaving no doubt as to which bit of the song you're talking about.

Flash in the pan?

Like most things on the internet, SoundCloud isn't perfect. The reliability of the waveform view has been questioned, with some users complaining of subtle white noise being added, inexplicable volume peaks and just plain bad visual representation. Generally, though, these seem to boil down to anomalies from corrupted files.

Whatever your

opinion, there's no denying that the waveform at least gives an overview of the depth, dynamics and texture of the music, and instantly shows whether a producer has overcooked the master bus compression. And while basic functionality enhancements such as zooming would be welcome, we're not fussed about the spectral analysis tool that some have been requesting.

In comparison to other audio hosts and music-orientated social networks, SoundCloud is in another league. There are no ecommerce facilities built in, but it's easy enough to link to a third party for that sort of thing. The unlimited storage and broad range of supported audio file types are huge plus points, as are the refreshing absence of advertising. All in all, we wholeheartedly recommend SoundCloud to anyone looking for a free, useful, easy and fun way to make their music available online.

"Your music can be downloaded, streamed, and linked to retail sites"

128kbps MP3 compression is applied, but downloads are always at full quality.

While it's uploading, there are a number of tags you can enter, from song title, genre, key and tempo to ISRC codes and keywords to help people find your music. SoundCloud enables you to link to online retailers (iTunes, Bleep, etc) or you can permit it to be downloaded for free.

Once the music's uploaded, you can begin sharing! A notification of the upload will appear on all your followers' Dashboards (unless you opt to keep it private), and tracks can also be shared directly, by dropping them into other people's DropBoxes (whether they're a follower or not). You can also share with a defined group or on various social networking sites, such as Twitter, Facebook and MySpace. Moreover, the song can be embedded anywhere that supports HTML (as can your DropBox), and for non-HTML

Alexander Ljung, SoundCloud CEO, talks to cm

cm With over 250,000 users signed up already, what do you think it is that makes SoundCloud so popular?

AL "I think a lot of us involved in creating music have had really bad experiences and felt a lot of frustration over how annoying it is to send and receive music with other people. When we started SoundCloud, we were 'scratching our own itch' and trying to create something we'd been wanting for ages. I think this itch was something that quite a lot of music creators had been feeling, which therefore made SoundCloud compelling to them, too."

"There have been great online services for the creators of photos and videos, but for some reason, there never seemed to be one aimed completely at the creators of music and audio. We're also suckers for great web design and especially easy-to-use web sites, and I think we've managed to create a great user experience with SoundCloud."

cm Explain the driving concept behind SoundCloud and how it developed.

AL "Initially SoundCloud's co-founder Eric Wahlforss and I just wanted to solve one simple thing: to make it ridiculously easy to send somebody a work-in-progress track and get their feedback on it. This is why we put a lot of emphasis on how people can share things privately on the site, and also why we made the 'timed comments'.

"From this grew a larger vision of an audio-only platform that could help music creators collaborate on and share their work in many more ways. Flickr, and what it has done for the creators of photos, has been a big source of inspiration for us."

cm How is it different to other FTP sites or social networks that enable file sharing?

AL "FTP allows you to transfer a file to somebody in a really clunky way. We always aimed to get to the point where you're not thinking about the file, but instead focusing entirely on the music. We accept any audio formats, make the track page beautiful and have a really smooth process for the whole transfer. Many people have found that when receiving tracks this way, most times they don't even have to download the file and clutter their hard drives - simply keeping it in the cloud and streaming it is enough."

cm You've made the SoundCloud API available to developers. What's the thinking behind this move, and how will SoundCloud users benefit?

AL "API is a technical term for Application Programming Interface, but really you can think of it as a few big Input and Output channels for SoundCloud. It basically makes it possible for other programs or websites to save to SoundCloud or export from SoundCloud. A great example is the iPhone application FiRe from Audiofile Engineering, which can save sounds from your iPhone straight to your SoundCloud account.

"It's a simple process for a programmer to add SoundCloud support to their software, and we often help people with the integration - so, if you have any music programs that you'd like to integrate with SoundCloud, let the company know and we'll help them along!"

cm Will people be able to sell their music directly from SoundCloud in the future?

AL "Never say never! But at the moment it's not on our roadmap. However, we're always listening to what our users need and changing the roadmap based on that."

cm Any news on an iPhone App?

AL "Can't really say right now, but do keep an eye out kind of soonish..."

cm So just what is coming up in the future of SoundCloud?

AL "Over the next few months, we have some very exciting new features that will make a big improvement to how useful SoundCloud is on a daily basis. There's also been a lot of interest around our API from other cool companies and products, so keep an eye out for SoundCloud news from people other than just us!" **cm**

> make music now / 'cloud busting'

10 SoundCloud tips

1 Be specific with your genre. Although it may isolate some listeners, the more accurate you can be about what kind of music you're making, the more likely it is to end up in the right hands.

2 The same goes for tags. An accurate description and some useful, interesting information can go a long way. Avoid anything too vague or purely aimed at upping your play count.

3 Send your music to groups. 'UK Jazz Hip-Hop', 'Wonky Dubstep' or 'Whatever It Is You're Doing' will be full of like-minded musos. Can't find a group that matches your particular flava? Start your own!

4 Use social networking site links by exploiting SoundCloud's Share function - then tweet, blog, wall-post or bulletin your music for others to hear.

5 Get involved with the community. You can't expect feedback without contributing your own opinions to others. Don't just mindlessly click Follow on anyone in your path, though - it's about quality not quantity.

6 Be constructive. The idea is to create a forum for discussion, in the hope of getting some decent feedback.

7 Use DropBoxes - that's what they're there for! SoundCloud has been plagued with mass DropBoxing as of late, but it's the easiest way to get your music to who you want, quickly!

8 Check out the people who follow you. They're probably doing so for a good reason, and it might be valuable to follow them back or comment on their music.

9 Use the search function. There are few other ways of finding what you want, especially if it's as obscure as some of the music out there at the moment.

10 Have your music listed for download. If it's not for sale elsewhere, or perhaps a live recording or album snippet, then why not give the full quality version away for free?

> Step by step Putting your music on SoundCloud



1. Track info

Track name *	Gordon G
Track description	based on a novation xo-synth groove and a synth i programmed in reaktor 5, written in 5/4
Genre	max 40 characters
Electronica	Track Type
Live	BPM
Key	G
Record label	Name of the label if they're not on SoundCloud
Other	Release/catalogue number
Release date	ISRC

1 > In your Dashboard after logging in to your account, click **Upload & Send**, then select the file you want to upload. SoundCloud supports most audio formats and a wide range of sample rates and bit depths, so conversion shouldn't be necessary! By default, the file name will be used as the track title, but this can be changed afterwards.



2 > It's a good idea to enter the **Genre** and **Track Type** (Original, Demo, Remix, Live, Podcast, etc), as that sort of information encourages more specific feedback from listeners. The tempo (**BPM**) and **Key** can also be entered if it's relevant to the style.

Keywords/Tags separated by space: e.g. funk hard dirty vocal jazz
future garage, trp, marty, 4x4, niche, 2000s, amen break, nly synths, hz bslam, esox, rhodes, "Buy this track"-link use a link that goes directly to a page where this track can be bought
<http://jtreole.bigcartel.com/product/three-point-one-four-ep>
You can sell your tracks on Digital Twins very easily using SoundCloud [Learn More](#)

Video link: YouTube, Vimeo, Google Video and Veoh videos will appear in an on-site player
<http://vimeo.com/groups/videograph/video/6037083>

Artwork: You can upload jpg, png, gif, tiff images up to 2 megabytes
[upload new artwork](#)
or remove the current picture

Licensed as All Rights Reserved [Change License](#)

3. Who is this track for?

Public (available for everybody)
Private (choose who can listen)

3 > Next comes the legal stuff: **Record Label** (if released), **Release Date** and **ISRC** codes (like a digital bar code), but this isn't essential and won't affect your rights. Note, however, that it is always worth securing your own music copyright: simply post your track on a CD to your own address and don't open it - the dated post-mark proves ownership.

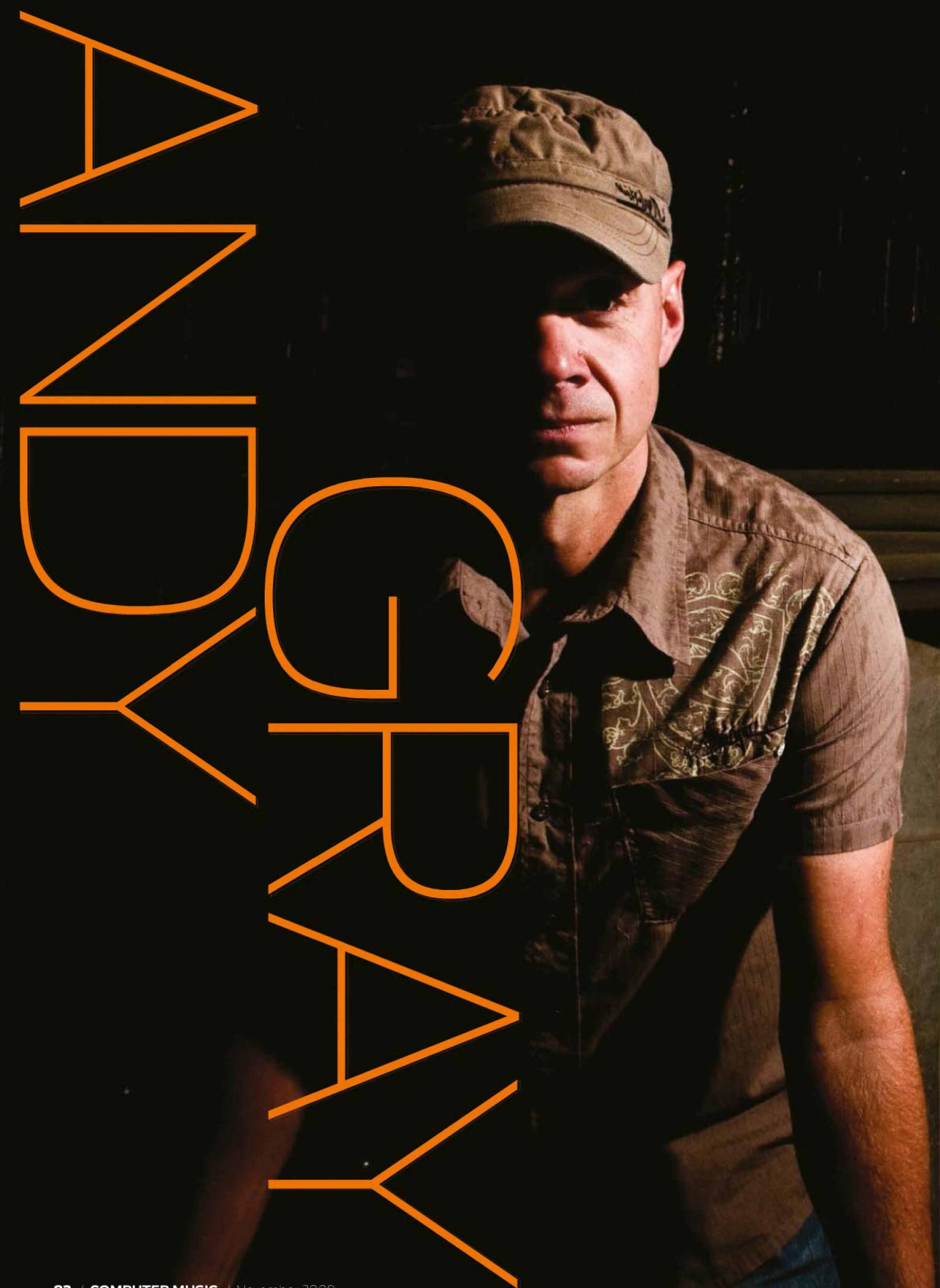


4 > You can expand on Genre and description with **Keywords/Tags**, ranging from simple adjectives ('funky house', 'soulful hip-hop', etc) to anything that might draw people into finding your music. This is really a case of being creative with what you think separates your music from everyone else's.



5 > You can link to external ecommerce systems. With iTunes, for example, right-click your iTunes album cover and it'll give you the option to copy the URL. Paste this back into the relevant field in SoundCloud and it'll link straight to the 'shop'. In this case, you'll presumably only want your music to be streamed from SoundCloud, but otherwise you can opt to make it freely downloadable at full quality.

6 > You can add artwork, if you have any, and even video (YouTube, Vimeo and Google video formats are supported). Finally, decide whether your track will be private or public. If private, you can grant access to any of the people you follow on SoundCloud or enter email addresses from your contact book. Agree to the terms of use and you're ready to start sharing your music!



From the *Big Brother* theme tune to *The Matrix Reloaded*, you'll have heard Andy Gray's productions one way or another. **cm** catches up with the busiest man in music...

> If you want to make a successful career out of making music, you could do a lot worse than take a leaf out of Andy Gray's book. His philosophy is quite simple: be diverse and move fast! He represents computer-based music production at the highest level, and to see him in action with Pro Tools is to witness a man at the peak of his game. That might sound a tad dramatic - like we're talking about some kind of 'production athlete' - but this is a man who can knock out a Hollywood film score by lunchtime and produce an album for the current hot indie band in time for dinner.

He's also living proof that getting to know one thing inside out is a key to success in this day and age. He doesn't just fill his hard drive with every soft synth and DAW he can find, instead he dedicates himself to Pro Tools and hand picks only the best plug-in instruments and effects.

Shades of Gray

OK, hyperbolic introductions are one thing, but where's the proof? Well, for starters Andy has had his music featured in countless films and TV shows. Then there's his production work behind some of the darlings of today's music scene, including rising stars Enter Shikari, who are currently all over Radio 1's A-list. He's also remixed everyone from Madonna to U2 and had several dance hits on the Perfecto label under the name Amoebaassassin, along with Steve Sacre. There's also a certain TV theme that anyone in the UK will be all too familiar with - yes, Andy wrote the tune to *Big Brother*, the decade-running reality show that has surely been one of his most lucrative outings.

We caught up with Gray at his stunning manor house and home studio, just as he was putting the finishing touches to the trailer for a new Matt Damon film (see more on this at www.musicradar.com). Presently, Hollywood producers come to him to get their music sorted, which is a far cry from his early days in the music industry...

"It goes back quite a long way," Andy recalls. "I got a job in Rod Argent's in Denmark Street, demonstrating synths and drum machines. That led to Pete Lawler - who went on to write the

Stiltskin Levi ad music, *Inside* - offering me a job in a recording studio. I worked with him for three or four years, doing engineering. While there, I worked with Derrick B, the rapper, and eventually I went freelance."

Clearly, working in music shops was a good way to make contacts back then, because after meeting Lawler for his first job, another chance encounter led to Andy getting hold of his first decent sequencer.

"During a period away from the studio, I was working in Syco Systems," he says. "It must have been around 1989, and there I met Mark Badger, who worked for Steinberg. He came in with a computer under his arm and said, 'I've got a computer here that can record MIDI and audio', and we all couldn't believe it. It was an Apple Mac 2FX that he was using, and he had set it up to record four tracks of audio. As I watched him record audio, then move it around on screen, I knew that everything was about to change. Before that I had used a Synclavier System with eight tracks direct to disc, but it cost something like £250,000 and took up a whole room that needed air conditioning - obviously out of everyone's reach!"

"I stayed with Cubase until Logic Audio came along," he continues, "then Logic Audio developed a TDM system for Pro Tools. At the time, Pro Tools was only really a tape machine and didn't have the features a programmer would want by a mile, so I stayed with Logic until... well, I think the very first Pro Tools I came across was version 6. Now I wouldn't use anything else."

Getting with the program

20 years on from that first encounter and Andy has Pro Tools 8 with a state of the art Avid ICON desk. It's a far cry from that early Cubase setup, but even back then, he was enjoying success in both underground and mainstream circles.

"It was probably the Derrick B stuff back in the late 80s, early 90s," he says, recalling his first taste of success. "I did all the programming for a couple of hip-hop/dance hits, and after that, I did all the programming - apart from what Phil Oakey did - on The Human League's *Octopus* album. I also rewrote loads of the bits on some of the alternative tracks for that."

Eventually Andy landed a deal with the hottest dance label of the day, Perfecto Records, and formed Amoebaassassin with Steve Sacre, which really solidified his music career...

"We had the biggest Cream track and the biggest track in Ibiza," Andy recalls. "I then went on to do three or four songs for the end credits of films, including *Swordfish* and *Time Cop*. In between all of that, there was so much other stuff, including remixes for Madonna, Ian Brown and U2. I really enjoyed the remixing career - in fact, I'm just about to start doing some more."

Gray went on to work with one of the biggest dance acts of the 90s, Fluke, helping them with the track *Zion*, which ended up appearing in *The Matrix Reloaded*.

"I also worked with Syntax after that," he continues, "and co-wrote a track called *Bliss*, for which we got a lot of syncs, on programmes like *The OC*. When Syntax folded, I went on to form Fatal with Syntax lead singer Jan Burton. We're just about to finally put an album out. We've got 40 songs, one of which is the end theme to a US show called *Traveler*. We've been touring a lot as well."

As you can see, Andy likes to keep himself busy - but we're not done quite yet...

"I've also started working with a couple of indie bands, including one from Brighton called Kovac, whose album has just come out. And I've started a couple of projects of my own. Most recently, I produced Enter Shikari. We did four months solid here at the studio. They're always gigging, those guys. I'm working on their third single, and Radio 1 have just A-listed them. I've also written 140 finished backing tracks for sync work - from breakbeat to classical - there are a couple of things for Disney in there, too. There's always something going on!"

The big tune

Before all of that came along, though, there was *Big Brother*. We ask Andy about the track for which he's undoubtedly best known.

"Yeah, it's been ten years," he says. "I actually got the *Big Brother* tune from a clubby idea based on some music I did for the film *Get Carter* - a track called *Descent*. It's not a very good film, but in the fight scene with Mickey Rourke beating up Sylvester Stallone, if you

Getting in sync

Andy's a master of producing music, then licensing it to film and TV. It's a tactic that certainly pays off these days, as artists find it increasingly difficult to make money from their recordings...

"I've known for a long time that it's vital, and I've made most of my living from sync work, one way or another," he says. "It's crucial, and whenever I work with a band, from the moment we hit record on the album, I drop the hint and say, 'That'll be good for syncs'. You need to get it into their heads that if they're not selling many records but are well known worldwide - as everyone's downloading them for free or watching them on YouTube - then they do need a way to make a living. It's not all about the money - it never would be for me - but you do need a way to sustain what you're doing, and for it to move forward. So sync work is the crucial thing, although it's not that easy any more, as everyone's into it."

listen to the music, you'll hear the beginning of *Big Brother*, the chord pattern. The sound came from an Access Virus - I was playing about with the idea and got a call from my manager asking if I wanted to pitch some ideas for this new show, *Big Brother*. They wanted something uplifting, edgy and summery, so I put together a three-minute version of that dance track, which was doing well in the clubs. I was told it wouldn't work, but I insisted on sending it. It went top 5,



actually a really dark progressive house track, which I still really love - but I have to say, I'm not so fond of that bit you hear on the telly now."

With so many projects on the go at any one time, Andy's become a master of working quickly. How does he do it?

"Whether it's classical or dance, I always start with a rhythm and a bassline, no matter what," he reveals. "Even if it's a classical track, I'll use a cello for the bass. And I've discovered a cheating

Andy also likes to stick to the same tools, no matter what genre of music he is producing.

"My stock EQ and compression are the Sony Oxfords," he affirms. "This Avid ICON mixer is like the centre of an Oxford desk, to be honest, so it maps to them and I find it very easy to EQ with. My mix bus compressor is either a copy of an SSL or the Oxford. It's a very forgiving compressor and doesn't lose any bottom end, which is the main reason I love it. My drums will be sub-grouped to the TC Master X compressor. It was supposed to be a finaliser, but it turns out to have a great, fat sound and keeps everything rock solid. There's a lot of talk about sidechain compression these days, like it's something new, but I steer clear of over-compression."

Hard work

Andy does have a lot of hardware outboard gear in the studio as well, but these days it's pretty much gathering dust...

"Yeah, I have every hardware synth that's been any good, and to be honest, I don't think I've switched any of them on for a long, long time," he says. "Maybe once in a while, to make sure the batteries work. Everything is virtual now, every single synth."

"I really like the Xpand! module that comes with Pro Tools," he continues. "I never bought hardware sound modules like the Roland JV-1080, as I thought I'd end up using the same sounds as everyone else, but Xpand! has infinite variety. I also use Spectrasonics Omnisphere a lot. It's a crazy-sounding keyboard. I think that, in my whole life, I will never hear every preset

"I always get a brief from the client, so I start with a drum beat, depending on what's wanted. Most of the time, they're very specific as to what they want"

and at the last minute, they chose it above 130 other pitches. They've used it ever since."

"The *Big Brother* theme has its good and bad points, for me," Andy continues. "It is one of the most synonymous TV tunes in the UK, other than something like *Coronation Street*. So what happens is that no one tries to copy it - they just use it. For example, Harry Enfield did loads of spoof sketches and they used the original, so I still got the credits - it does add up over ten years!"

"It's funny, as the bit you hear on TV only happens twice in the original 12-minute track. It's

way of playing the guitar, so I also use that for a lot of writing, with an open tuning system. So I'd start with a blank session in Pro Tools, maybe with a distorted Rhodes plug-in, then a piano... Other than that, I always get a brief from the client, so I start with a drum beat, depending on what's wanted. Most of the time, they're very specific as to what they want. They might say they want it to sound like The Prodigy, but you can only use that as an idea, never copy. I just get an overall feeling and have that in mind when selecting the elements - like the bass, kick and snare - and the vibe."



Andy's Avid ICON console is the only hardware in his studio getting any serious action these days

that it comes with – there's just no way. If I start playing with it, I give myself an hour just to find the right sound."

And on composing so quickly, Andy clearly has a master plan...

"Yeah I do," he agrees. "I think I've found a system or framework, and if I need a sound very quickly, I'll use Xpand! 2. But a lot of my programming now, like the stuff I've done with Enter Shikari, is done with a plug-in plus a synth. You might have a cool synth patch with a decimator, so that the resulting sound will be completely different without programming the actual synth. The great thing about that is that with the Enter Shikari album, it was all 'played', and we used plug-ins to process all the sounds to make them glitchy. It was all done with plug-ins over the original played instruments."

Andy has joined the ever-increasing ranks of the 100% 'soft' producer, then, but is there anything in his opinion that's bad about using a purely digital environment?

"No, nothing."

So, there you have it! It only remains to ask Andy what advice he'd give those looking to reach his extraordinary level of success...

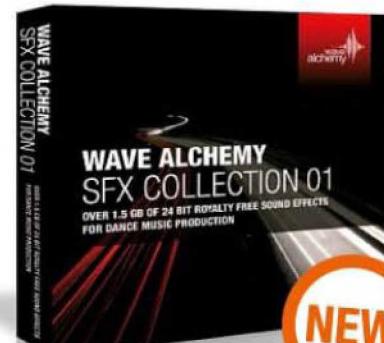
"You need to be able to play live. Sitting in a studio, tinkering to create a track... I don't know how you can do it, as the media is overrun. There's a hundred of everyone, so you need that edge. At least if you're playing out, you can keep in touch with people. I also say that you shouldn't copy – have your own sound. Mine is to make everything clear and sonically in-your-face. If you have a style, stick to it." **cm**

Selected kit list

- Digidesign Pro Tools 8
- Avid ICON console
- Digidesign Xpand! 2
- ARP 2600 synth
- ARP Solina String Ensemble
- Dynaudio monitors
- Korg Z1 synth
- Massive selection of vintage mics
- Moog Memorymoog
- Sonnox EQ and compressor/limiter
- Spectrasonics Omnisphere
- SSL plug-in suite
- TC Electronic Master X
- Waldorf PPG Wave synth

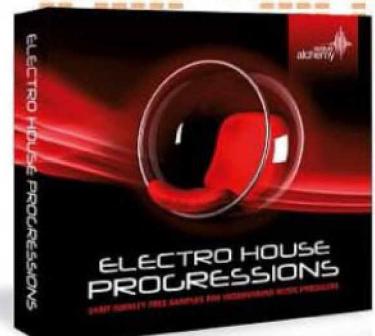


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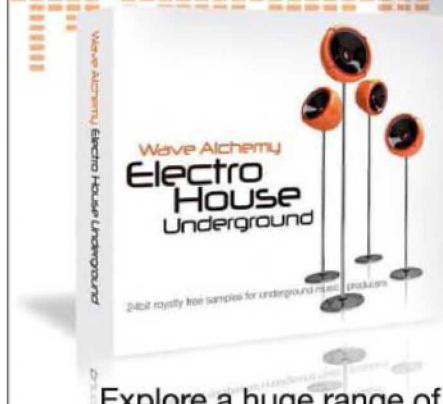
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Computer Music Magazine 10/10

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Computer Music Magazine

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Music Tech Magazine 9/10



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98 112DB REDLINE EQUALIZER

After impressing us with their reverb, will 112dB's latest effort also send our score meter into the red?



92 IMAGE-LINE FL STUDIO 9

The famously fruity DAW receives a refreshing update to sweeten the whole package

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Our promise

We bring you honest, unbiased appraisals of the latest computer music products. Our experts apply the same stringent testing methods to all gear, no matter how much hype or expectation surrounds it.

What the ratings mean

- 1-4 Give it a miss. A seriously flawed product that should be avoided
- 5-6 Not too shabby. It's an OK product, but not without faults
- 7 Good. Definitely worth considering
- 8-9 Very good. A well-conceived and executed product. Recommended
- 10 Excellent. Essentially faultless



Awarded to products that challenge existing ideas and do something entirely new



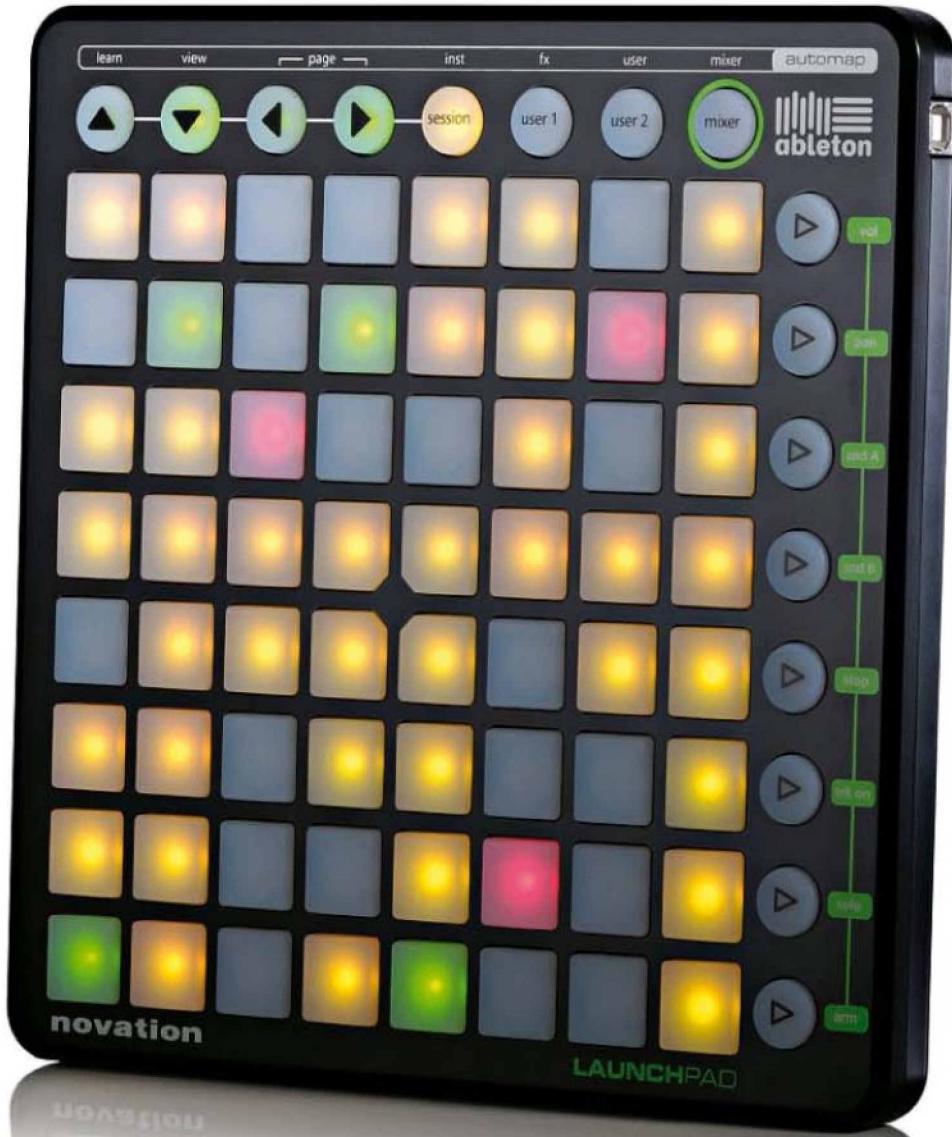
A product has to really impress us with its functionality and features to win this one



If the product exceeds expectations for its price, it will receive this gong



In the opinion of our editor, the best product reviewed in the magazine this month



Novation Launchpad £150

PC MAC



Akai might have taken the lead with the APC40, but Novation are looking to rocket ahead in the dedicated Live controller arms race

System requirements

PC 1.5GHz CPU, 512MB RAM,
Windows XP/Vista, USB port

Mac G4 CPU, 512MB RAM, OS X 10.4,
USB port

Test system

Mac MacBook 2GHz Intel Core 2 Duo,
2GB RAM, OS X 10.5.6, Ableton Live 8

Mac Mac Pro Dual 2.8GHz Quad-core,
4GB RAM, OS X 10.5.6, Ableton Live 8

> Ableton Live has been steadily gaining popularity over the last four or five years, going from an 'outside DAW' to the trendy software that everybody wants to say they use - no matter how much it actually figures in their productions and live work. During this time, there have been numerous controllers touted as being suitable for Live, but the best bespoke ones are almost always created in conjunction with the software developer, as Akai showed with their excellent APC40 (cm141, 10/10). Imagine our delight, then, when Novation's similarly collaborative Launchpad landed in our lap. So what are we looking at here, exactly?

Launchpad is a USB-powered device that enables one to sidestep much of the on-screen

mouse-work, and all without the rather imposing bulk of the APC40. Novation would have struggled to design something simpler than this 64-pad matrix, with additional rows of eight control buttons along the top and down the right side. There isn't even a power switch!

Cute as a button

The next thing you notice is the eminently simple but sturdy construction. You get the feeling that if you dropped it, it might possibly crack, but it would probably go on to give you years of reliable service anyway. The buttons also feel like they would easily withstand the kind of sustained bashing that we musicians love to dish out when we're 'in the groove'.

"The buttons also feel like they would easily withstand the kind of sustained bashing that we musicians love to dish out"

Those buttons also have two pads in each corner with a small raised dot, so if you're unable to see the pads for whatever reason, you can still tell where your fingers are.

Our only criticism about the build is the odd pad response, whereby it only takes a gentle press to generate a trigger signal, but you don't feel an under-finger 'click' until you press a bit harder. Novation say that this is for the purpose of durability, so only time will tell if it's worth it.

After a simple installation, Launchpad couldn't be easier to use. It offers up two main Live modes, Session and Mixer, both of which are self explanatory. In mixer mode, as well as soloing, muting and arming tracks, there are modes for setting pan, volume and send levels, with the backlit pads forming columns indicating the level, etc. In reality, these functions probably won't see a lot of use for most people, as by the time you hit a few buttons to go through the display modes, it would be quicker to use a trackpad or mouse. And the control isn't very fine when you get there anyway. Still, it's nice to have the option.

Heavy session

Session mode is just as you'd expect, offering triggering of scenes and clips, and the same group navigation as the APC40, jumping through the session matrix in eight-by-eight chunks. The buttons light up to reflect slot contents: unlit for empty, amber for a loaded clip, green if it's playing and red if recording.

There are also two freely assignable user modes. The first of these defaults to triggering Drum Racks in Live (although the pads send out a fixed velocity of 127), and under either user mode, buttons can be assigned to pretty much anything that responds to MIDI - we set them up so that we could bring up full transport controls and tempo nudge buttons, for example.

Oh, and you get a special cut-down version of Ableton Live 8, too, although we suspect that anyone who's thinking of buying a Launchpad will already have their own copy of Live.

So, it's time to take stock, and obviously the big question is bound to be: should you buy an APC40 or a Launchpad? And, indeed, is there a case for getting both? Well, Launchpad has a number of potential advantages over Akai's unit. Firstly, it's perfectly portable, with just about nothing to break, so while the APC40 really needs a flight-case for live work, Launchpad will slip almost unnoticed next to your laptop, without so much as a plastic bag for protection. Launchpad also sports another three rows of clips and scenes over the APC40. And by stripping away all of the channel faders and knobs, those who generally rely on external mixing and/or those who already have their



Novation's Automap Standard enables you to use Launchpad with non-Live software

Putting it about a bit

So far we've only looked at using Launchpad with Live. But Novation's acclaimed Automap software makes it very readily compatible with other software. We tried it with the latest version of Automap Standard and it all worked fine. Drum machines aside, though, not many bits of software are crying out for a matrix of 64 drum pads and 16 round buttons. More exciting is the prospect of using it with Automap Pro, to map QWERTY keyboard shortcuts to the pads.

The prospects for integration with the forthcoming Max for Live are yet more thrilling. This promises to offer all manner of custom modules, like effects

and sequencers, and as Launchpad is said to communicate fully (ie, in both directions) with it, programmers will be able to address all of the LED colours at varying brightnesses, and utilise all of the buttons except the four mode ones. It sounds like an awful lot like Launchpad could become a monome for the mainstream...

The APC40 might have a broader array of cleverly mapped controls, but we'd say that Launchpad is more of a blank canvas. So while you can certainly customise the settings on an APC40, you probably won't, as they're all pre-labelled and it just feels a little bit like vandalism!

controller of choice aren't paying extra for something they don't need.

In terms of performance and integration, though, both are largely flawless, so we can't even slip a hair between the two in this respect.

Ready for take-off?

Ultimately, the APC40 is a more complete and complex proposition, and with its other editing features, it's a great compositional tool for the studio, too, whereas Launchpad is a lean, mean stress-reducing gigging machine. If the APC40 wasn't for you, Launchpad might well be, and with both units so perfectly suited to specific types of user, we can't imagine there being much competition between sensible consumers. In fact, there are compelling reasons for many to use *both* for different types of gigs (or even together - Launchpad works alongside the APC40, and with up to five other Launchpads). Suffice to say, we can't imagine that many Live users who take their show on the road who will regret buying a Launchpad. And at a thoroughly reasonable £150, this is surely a product that's about to take off in a big way. **cm**

Contact Novation, 01494 462246
Web www.novationmusic.com

Alternatively

FaderFox controllers

N/A >> N/A >> €250 each

A range of nifty Live controllers, though they can't compete with Launchpad's Session mode

Akai APC40

cm141 >> 10/10 >> £399

Has the edge for serious live and studio work, but isn't as portable

Verdict

For Stunningly simple

Great build quality

Portable

Reasonably priced

Handy user modes

Stable operation

Against Pads aren't velocity-sensitive

An excellent effort from Novation here, and one that will surely make Live complete for a good many users

10/10



Image-Line FL Studio 9 \$299 PC

This popular DAW has come a long way since its early days as a loop-based step sequencer. Can the latest version bear yet more fruit?

System requirements

PC 2GHz Intel P3/AMD CPU,
512MB RAM, 130MB HD space,
Windows XP/Vista (32-/64-bit),

Test system

Mac MacBook 2.26GHz Intel
Core 2 Duo, 4GB RAM, Windows XP
(Boot Camp)

> At the time of its launch way back in 1998, FruityLoops (as it was then called) was a primitive drum machine, but as the program evolved into something considerably more complex (eventually earning full DAW status), it quickly gained popularity with producers across a variety of genres. An intuitive loop-based workflow plays a major part in making FL Studio so popular with beginners and experienced computer musicians alike, and, unsurprisingly, v9 doesn't depart from this formula.

Spot the difference

At first glance, existing FL Studio users might struggle to spot the changes in the latest version, for besides a handful of extra plug-ins, FL9's enhancements are behind-the-scenes coding upgrades and interface tweaks. Let's start by taking a look at the new toys...

Autogun is the only new instrument and is based on the additive synthesis engine of Image-Line's Ogun plug-in. It has a preposterous 4,294,967,296 pseudo-random presets to step through, but thankfully, you can 'bookmark' good sounds and even share them with other

Autogunners. However, while Autogun is pretty cool, it's already available as a freeware Windows VST, so it doesn't add any value to the package. And in a similar way, Image-Line advertise the inclusion of demos of their Sakura and Ogun synths and the Gross Beat time-manipulation effect as "new plug-ins", which we think is misleading.

Of more value is the inclusion of five existing synths - DX-10, WASP, WASP XT, SimSynth and DrumSynth - that were previously bundled only with the top-of-the-range editions of FL Studio, but now come with all packages except Express.

Perhaps most enticing are the new effects. Vocodex is a huge step up from the old Fruity Vocoder, with a clear interface that makes it quick and easy to dial in great sounds. Stereo Shaper, meanwhile, is a mid/side-capable stereo processor, with a mixer for left/right channels and their inverted equivalents, plus knobs for channel delay and phase offset. M/S processing might not seem like an obvious choice for an FL Studio effect, but it's such a powerful concept that its inclusion can only be a good thing. There are lots of useful presets, too, divided into an

"Many of the improvements to FL9 have taken place under the hood"

Effects bank (with presets for 'stereoising' mono signals and other interesting stereo effects), and a Mixing bank. Not many DAWs boast such a straightforward yet comprehensive M/S tool and Image-Line are to be applauded for making a potentially confusing technique so accessible.

The new Riff Machine feature tied into the piano roll makes it easy to come up with riffs, arpeggios and chord progressions. In a nutshell, it's an automatic pattern generator that enables one to set a few key parameters that determine the melody and groove of a riff, with the results being sent to the piano roll. And if that still sounds too much like hard work, there's a surprisingly effective random option.

Behind the scenes

As we mentioned, any of the improvements to FL9 have taken place under the hood, and although they might not be as exciting as fancy new plug-ins, they're important in making FL Studio a swifter, more powerful program. With a list of bug-fixes and minor enhancements as long as your arm, it should be more stable than any previous version, and indeed, we found it to be rock solid, handling everything we threw at it. Check out the Freshened features boxout for more on FL Studio 9's enhancements.

Image-Line offer FL Studio packages at price points to suit every pocket. The complete Signature Edition (reviewed here) costs \$299, while the next step down, Producer Edition (\$199), loses a few plug-ins - most notably the Maximus multiband compressor/limiter, Hardcore guitar effects, Sytrus synth and DirectWave sampler. If you can live without those, Producer Edition is great value. At \$99, Fruity Edition is still a complete DAW with piano roll features, but it doesn't offer audio recording capabilities or more advanced features like Slicex and Edison for audio manipulation.



The brand new Vocodex vocoder effect takes the good old Fruity Vocoder to the next level



Get your pump on with the Fruity Limiter's newfound sidechaining capability

Freshened features

FL9 introduces a variety of minor updates to existing features. Fruity Limiter and the Mixer both now make sidechain routing a whole lot easier, and the Fruity Wrapper channel can now take full advantage of third-party plug-ins with more than two outputs.

The Playlist gets a minor overhaul to include track names and icons, mute switches, clip grouping and its own play button. Meanwhile, the new 'volatile linking' feature enables hardware controllers to link to the last parameter adjusted by the mouse.

FL Studio already supported multicore processing for instruments, but FL9 introduces long-awaited

support for multicore effects processing. This is a huge improvement over FL8, enabling effects to work more efficiently thanks to multithreading. The minimum system requirements remain relatively modest, and there's full support for Boot Camp on Macs (although you could say that about any Windows application, so no surprise there).

There are a few glaring omissions, though. For one, it's hard to believe that plug-in delay compensation (PDC) still has to be adjusted manually when just about every other DAW does it automatically. There's also still no dedicated freeze function.

Finally, Express Edition (\$49) has a greatly reduced feature-set and lacks piano roll and audio recording capabilities - it's less of a fully-fledged DAW, but still includes a step sequencer, arpeggiator and MIDI support. Whichever package you go for, though, Image-Line will give you free upgrades for life. Boxed versions are available, but they're more expensive and don't entitle you to subsequent free upgrades. Strange...

Apples and oranges

It's been clear since the days of the original FruityLoops that the FL Studio concept isn't for everyone - it's different to other DAWs and seems to divide opinion. Most current FL Studio users will receive v9 for free, and while it's not a massive update, they surely won't be disappointed. The real issue is whether it's enough to attract newcomers to the FL Studio stable. If you haven't yet, we strongly recommend that you give it a try - you may be surprised at the powerful punch it packs. **cm**

Contact Et Cetera Distribution, 01706 285 650
Web www.image-line.com
Info Signature Edition, \$299; Producer Edition, \$199; Fruity Edition, \$99; Express Edition, \$49

Alternatively

Sony Creative Software Acid Pro 7
cm 15 >> 7/10 >> £245

The most obvious loop-based rival but not as good with MIDI

Ableton Live 8
cm 13 >> 9/10 >> £400

More expensive but also more powerful in many areas

Verdict

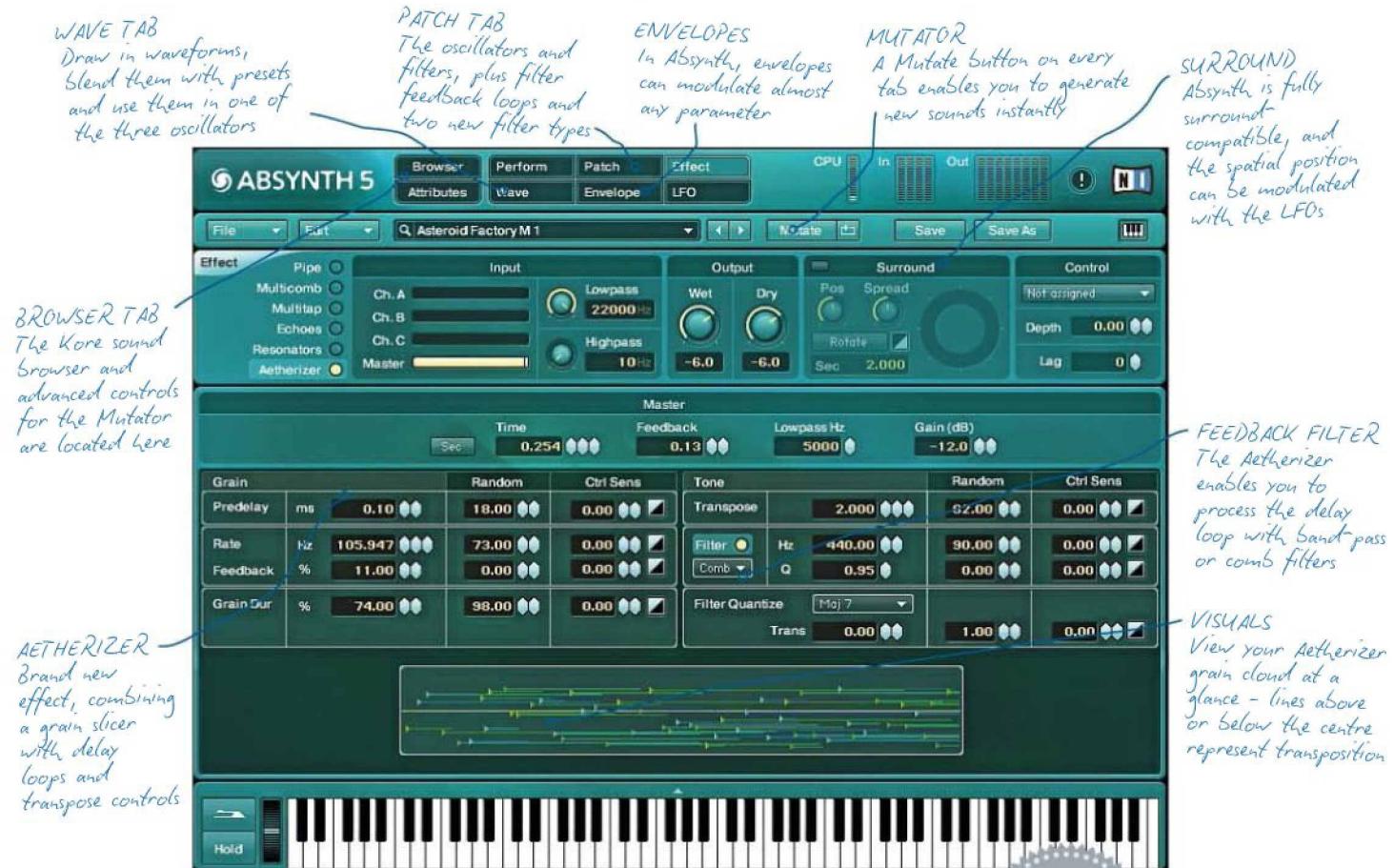
For Excellent new vocoder plug-in
 Mid/side stereo processing
 Sidechaining capabilities
 Multithreading for effects plug-ins

Against No automatic PDC or freezing
 Is it enough to tempt new users to FL?
 Demo versions are not "new features!"

It's perhaps not as immediately impressive an update as FL8 was, but this is another solid step up for the fabulously fruity DAW

8/10

> reviews / native instruments absynth 5



Native Instruments Absynth 5 €179

The sound designer's dream synth gets a host of new features, but are they likely to entice less experienced synthesists?

System requirements

PC 1.4GHz CPU, 1GB RAM, Windows XP/Vista (32-/64-bit), VST/AU/RTAS host or standalone

Mac 1.66GHz Intel CPU, 1GB RAM, OS X 10.5, AU/VST/RTAS host or standalone

Test system

Mac Apple MacBook 2GHz Intel Core 2 Duo, 2GB RAM, OS X 10.6

> Ever since its debut in 2002, Absynth has been lauded as one of the most versatile and powerful soft synths on the market. Native Instruments' semi-modular beast is truly feature-packed, boasting oscillators into which you can draw your own waveforms, definable multipoint envelopes, deep modulation capabilities, and some of the most 'out there' sounds you're ever likely to hear.

The LFOs, vast array of filter types and assignable performance controls are worth a mention, too, while a quick flick through the generous preset library reveals scorching leads, mind-boggling hybrid instruments and evolving pads that almost seem to be alive. A sound designer's dream, then - so what's new in v5?

Changing DNA

First up is the Mutator. This offers a new way of quickly creating new sounds by taking an existing preset and morphing it towards the sound characteristics of a group of others. Want that spacey electric piano sound to be darker and more percussive? Just select 'Dark' and 'Percussive' in the browser window, choose the

degree of change and hit the big Mutate button - that's the idea, anyway.

Unfortunately, because good Absynth patches are often so involved and considered, with each and every module set up to perfectly complement the others, Mutator isn't massively useful in practice: mutated patches just aren't nearly as perfectly crafted as the originals.

Furthermore, such is the diversity of the preset library that once you've used the browser to select a specific set of aural characteristics, you'll often be left with patches that sound almost nothing like each other. Mutator will then try to morph towards the overall 'feel' of these patches, often giving hugely unpredictable results, and sometimes having none of the attributes that you selected in the first place. You can, however, mutate just a part of your patch - see the *Mutate by module* boxout for more on this.

A simple set of eight rotaries to dial in basic sound qualities such as distortion, resonance, bass and treble now occupies the bottom part of the browser tab and provides the most instantly usable addition in this area.



"Aetherizer is fantastic as an effect plug-in for external signals"

Up in the clouds

The next big new addition is the Aetherizer effect. As existing users will know, one of Absynth's major strengths has always been the vast range of sounds you can coax from any one module, and this new one certainly lives up to that standard. What is, on the surface, a simple grain slicer with a couple of delay loops, actually turns out to be an incredible sound design tool. Everything from dense, glitchy sound clouds to long, swirling delay lines are possible, and when the randomise controls and Absynth's famous envelopes are brought into play, things start to get really interesting. In short, it's a top-notch effect that broadens the range of sounds you can get from this already hugely versatile synth, and it's fantastic as an effect plug-in for external (ie, non-Absynth) signals too.

Aetherizer's little brother is the Cloud Filter: basically a stripped down and simplified grain effect that can be selected in any filter module - ideal if you want to create granular effects on only one channel of your patch.

Elsewhere in the new filter department, we have the Supercomb: basically a more extreme, intense version of the Comb filter, which excels at creating metallic, harmonic-rich tones.

Several of Absynth's filters now also feature a feedback loop that enables you to run some of the filtered signal back into the filter's input via a waveshaper, frequency shifter or ring modulator. This can not only create some really frightening distortion sounds, but better still, feedback loops that have a brilliantly volatile, analogue quality to them, further solidifying Absynth's reputation as one of the most organic of sound design instruments.

Unfinished business

Perhaps disappointingly, Absynth 5 sees no major improvements to the interface, and aside from a few tweaks to bring modulation and filter menus in line with each other, it can still feel fussy, algebraic and over-complicated. This is most apparent when dealing with the envelopes, as other than using the Envelope and



We reckon Mutator's patch overview box could have been put to better use

Mutate by module

The Mutator control features a handy little box that enables you to select which modules you want to mutate and which should be left alone. While this can certainly help make mutations less unwieldy once you've isolated the correct modules, again, Absynth patches are often so involved that it might take you a few minutes just to work out which modules are doing what, thus defeating the point of a feature that's supposed to allow you to create new sounds "in seconds".

We think that the patch overview

box would be put to far better use as a master module activate/deactivate control, so that you could switch modules in and out on the fly - rather than having to dive into the patch screen - as you navigate Absynth's library of dense and complex sounds. In fact, it would be worth it for the addition of a master FX disable switch alone, which is still inexplicably missing from the browser screen (and this despite a Mutate button being added to every one of Absynth's eight tabs, nice touch though that may be).



The distinctive oscillator, filter and modulation routing page hasn't seen much in the way of adjustment

LFO tabs, there's still no way of seeing at a glance which controls are being modulated by what. Even a tiny visual clue that a control is being modulated by an envelope or LFO would go a long way towards being able to decipher a patch without getting a headache - something like Ableton Live's red automation dots, Reason's little green boxes, or indeed, the modulation system used in NI's own Massive synth would be well employed here.

The issue of usability is our only real frustration with this update. While version 5 has certainly brought some great new features (the Aetherizer and filter feedback features alone will be worth the €69 update price for most users), the effort to make the synth more accessible has been misdirected in creating the Mutator tool - it would have been better spent on revising the interface, we'd say.

Overall, then, Absynth 5 is still the mind-blowing synth that it always was, and if you're a serious sound designer, it's a must-have. However, we're left with the feeling that it could have easily been improved even further. **cm**

Web www.native-instruments.com

Info Upgrade from any previous version, €69
Available in Komplete 6 bundle, £424

Alternatively

Virsyn Tera 3

cm98 >> 10/10 >> €299

Powerful semi-modular VA with full spectrum and envelope editing

Spectrasonics Omnisphere

cm133 >> 10/10 >> £349

Multi-engine synth that will put you in sound design heaven

Verdict

For Capable of awesome sounds
Versatile and highly customisable
Excellent new Aetherizer effect
Various filter module improvements
Brilliantly crafted presets

Against Interface remains fiddly
Mutator often gives lacklustre results

It's still quite awkward to use but yet more impressive sound-design features make Absynth 5 a worthwhile update

8/10



Cakewalk PC MAC V-Studio 100 £629

Mix, record and control wherever you may be with this multitalented package from the 'Cakewalk by Roland' partnership

System requirements

PC Windows XP/Vista 32-bit/64-bit,
USB 2.0 port

Mac Intel CPU, OS X 10.4.11,
USB 2.0 port

Test system

PC 2GHz Core Duo laptop, 3GB RAM,
Windows Vista SP2

Mac MacBook Pro, 2.7GHz Core 2 Duo,
4GB RAM, OS X 10.5.6

> For the modern musician, the computer often fulfils multiple audio roles, and if your musical activities extend beyond the studio, that usually means carting around not just your computer, but a suitable audio interface and perhaps a controller, too. Cakewalk's collaboration with parent company Roland has thrown up a potential solution, though, in the form of the V-Studio 100, a compact package that's not only an audio interface, but also a controller and standalone recorder. It works with Windows and Mac OS X, and they've bundled in a healthy collection of software, too - see the *Bundle of joy* boxout for details.

Like its much bigger (and pricier) sibling the V-Studio 700, the VS-100 is a USB 2.0 device (though not a bus-powered one) that combines numerous technologies in a single package. It's got audio inputs and outputs, plus a basic mixer, flash recorder, control surface and even a motorised fader thrown in for good measure. Naturally, a few things have been left out in order to squeeze all of this in, but the compact VS-100 is a surprisingly well-equipped unit.

Ins and outs

Plugged into your computer via USB, the VS-100 provides a versatile set of inputs and outputs. On the front are balanced mic and line ins with preamps and dedicated level controls, plus a high-impedance switch for guitars on the first input. On the back are two more balanced mono ins and an unbalanced stereo phono pair, for a total of six analogue inputs, and there's a stereo digital input, too.

As for outputs, the V-Studio 100 has four balanced and two unbalanced channels, with the unit running at up to 24-bit/96 kHz. There's also MIDI in and out, plus phantom power for mics that need it. Some audio interfaces offer more connectivity for your money, but the V-Studio 100 provides an optimal set of ins and outs for everyday usage. Most importantly, the preamps are clean and transparent, which is especially nice given the price of the box.

Whether connected to your computer or running standalone, the VS-100 doubles as a mixer, with hardware knobs for controlling channel levels/panning and the onboard digital compression, EQ and reverb. In addition, the

"The VS-100 is a near-perfect do-everything box"

audio interface can mix signals direct to the output without any latency introduced by routing the audio through software. Some competing audio interfaces offer similar functionality, but they typically lack the hardware controls that make mixing on the VS-100 so easy.

Motoring along

A 100mm motorised fader for adjusting the level of the active track, buttons for markers and track controls, an assignable encoder and a transport section are onboard. Because the VS-100 supports the Mackie Control protocol, it integrates with non-Cakewalk DAWs like Logic, Pro Tools, Cubase, Reaper and Live. If you're a Sonar user, though, support for Cakewalk's ACT (Active Controller Technology) intelligently and automatically maps the additional controls on the mixer portion of the VS front panel. The unit is fairly limited in comparison to other models, as there just aren't that many physical controls, but it does a good job of covering the basics, whether or not you use Sonar.

If you like to travel without lugging a laptop about, the VS-100 is a worthy addition to your kit bag. The mixer functions and effects all work independently of USB, so you can carry just the device and its power supply. There's an onboard wave recorder, which uses SD flash memory cards; and with SDHC support, you can easily add gigabytes of storage for recording whole live sets or rehearsal sessions. The recording is stereo only, but coupled with the mixer, you could easily capture a full band mix. Like Roland's mobile recorders, there are also marker and loop functions - useful for practicing certain sections of an arrangement or queuing up backing tracks. There's even a metronome.

The bad news is that the flash recorder is disabled when the unit is plugged into the computer, so you can't record the output of the mixer or make SD recordings of your laptop or band performance with the USB connection active. Cakewalk say that Roland are aware of this drawback and are investigating whether a firmware upgrade could resolve the issue.

Let's interface it

It's hard to deny the value of the VS-100. The audio interface alone is a winner for its great preamps and rock-solid Mac and Windows



Windows users can enjoy Sonar VS, which is a lot more full-featured than typical 'bundleware'

Bundle of joy

The V-Studio 100 comes with a generous software bundle for Mac and PC. There are the Cakewalk Studio Instruments, comprising bass, drum kits, electric piano and strings, which sound pretty and have a lovely GUI to match, plus Guitar Rig 3 LE.

The effects really stand out, adding genuine value to the bundle. The VX-64 Vocal Strip is a surprisingly powerful combination of a terrific-sounding deesser, compressor/expander, tube-emulating equaliser, doubler and synced delay. Vocalists too often get left out of software consideration, but here they get a rich rack of tools for recording. The Boost 11 Peak Limiter

provides a nice mastering limiter, and Channel Tools offers indispensable utilities like L/R swap, stereo and mid-side adjustments for recording stereo mic pairs and delay.

There's also a special edition of Sonar (for PC only), called Sonar VS. For those seeking a new tool for multitrack recording and arranging, this is a strong choice, as it feels like a full-on DAW and not just a bundled extra. The interface is quite clean and straightforward, being user-friendly but without sacrificing any serious functions. It certainly contains everything most users will need for audio/MIDI recording and arranging.

drivers, especially combined with the utility of a flying fader and transport buttons. Throw in a basic mixer with real hardware controls and a fine software bundle, combined with the ability to mix and record even without the computer, and the VS-100 is a near-perfect do-everything box. You may want to look elsewhere if you're primarily interested in audio I/O, or if you prefer a dedicated control surface and/or mixer, but otherwise, this could well be the home and mobile producer's best friend. **cm**

Contact Edirol UK, 0208 747 5949
Web www.cakewalk.com



Despite being so compact, connectivity on the V-Studio 100 could hardly be described as meagre

Alternatively

Zoom R16

N/A >> N/A >> £350

Eight inputs, SD recording, mixer and control surface capabilities

MOTU Traveler-mk3

cm142 >> 8/10 >> £795

FireWire interface with loads of I/O and software-operated 28x16 mixer

Verdict

For

Built-in mixer
Flexible audio I/O with great preamps
Useful control surface
Offers standalone mixing/recording
Rich software bundle

Against

Limited as a control surface
Recorder disabled when USB is active

The Cakewalk/Roland partnership has resulted in a flexible, feature-packed device, which oozes quality

9/10

> reviews / 112db redline equalizer



112dB



Redline Equalizer €149

Last issue, 112dB impressed us greatly with Redline Reverb, but can they repeat this success in the realm of equalisation?

System requirements

PC AMD Athlon 800/PIII 850MHz CPU, 256MB RAM, Windows XP/Vista/2000

Mac Intel/G4 1.2 GHz CPU, 256MB RAM, OS X 10.4

Test system

Mac MacBook 2GHz Intel Core 2 Duo, 2GB RAM, OS X 10.5.6, Apple Logic Pro 9, Ableton Live 8

Mac Mac Pro Dual 2.8GHz Quad-core, 4GB RAM, OS X 10.5.6, Apple Logic Pro 9, Ableton Live 8

> We're big fans of 112dB's Redline Reverb ([cm144, 10/10](#)), as it brings a lush, musical sound to a saturated market. Now they've released an EQ, Redline Equalizer, and most impressively, it lives up to the high standard that the company have set for themselves.

The centre panel is dominated by a large graphical interface, which also has a useful spectrum analyser option (albeit with a nearly invisible pale grey colour scheme). Below this are the main EQ controls, with a high- and low-cut at either end and five parametric bands in the middle, each offering a more than ample 24dB of cut or boost, with frequency ranging from 10Hz to 28kHz. You can also set the gain character - ranging from soft to surgical - which affects the interaction between the Q setting and the gain level. This can be handy for gentle sound-altering duties, as opposed to, say, cutting a specific frequency.

Classic bands

Each of the five parametric bands can be set to one of eight different algorithms, most modelled closely on classic kit. These are a basic digital

and tube EQ, and modelled versions of six classic units: Neve 1073, 1081 and 1084 EQs, an SSL 4000E and an API 550A and 550B. You can freely mix and match them (eg, use a smooth type for your top-end and a clinical digital algorithm for punchy bottom-end). And this EQ has yet more tricks up its sleeves...

One of our favourite features is auto-gain, which balances the volume of the signal so that the perceived loudness is around the same as the bypassed signal. Since a loud signal always sounds 'better' than a quiet one, this feature helps to ensure that the changes you're making are really improving the tone and not just making it sound better because it's louder. Auto-gain isn't perfect, but it is incredibly useful.

Quite unusual are the Phase Shift and Dynamic EQ sections, both of which offer up a level of control we're not accustomed to seeing - see the *It's just a phase* boxout for more on these. Easier to grasp is the harmonic distortion section, which offers up three parameters with which to dial in that elusive subtle warmth.

Apart from the obligatory input and output gain controls, that covers all of the main

"Redline Equalizer is probably the most feature-packed and original EQ we've ever encountered"

controls, with the only big bit left to explain being Channel Mode. This offers Stereo, Left/Right and Mid/Side modes, the latter of which splits the signal into elements common to both channels (mono/mid) and elements that differ from channel to channel (stereo/side). This incredibly powerful function enables you to independently apply EQ to the stereo part of a signal and the common mono centre part. This obviously has huge potential for balancing or accentuating aspects of stereo material.

The plug-in also shares some of our favourite features of Redline Reverb, including control detentes (when you move a control, it easily snaps back to its original position – handy if you want to 'abort' a tweak in progress), skins (two of these are supplied), assignable MIDI, adjustable knob-control characteristics and pop-up value displays during editing.

The Equalizer?

Redline Equalizer represents a landmark release in many ways. It's probably the most feature-packed and original EQ we've ever encountered, and its dazzling array of controls and options are more than just gimmicks – they really do make it incredibly versatile. And more than that, they set a number of precedents for what's possible and what we should expect from future EQ units.

We pushed Redline Equalizer pretty hard and pitched it against our best EQs – we found that the top-end was capable of extreme boost without too much harshness, and that the bass could be pushed hard without losing much punch or definition. And there's a rather large selection of presets, all separated according to suggested use. Obviously, EQ presets will always need plenty of tweaking, but they're a good way to get a feel for the range of sounds available from Redline EQ without having to actually tweak every parameter each time.

Now, whether or not the sound of Redline Equalizer is quite as unique as its options suggest is a little more debatable. It definitely sounds great, and is a fine tool, but much of EQ choice is down to preference, and while useful, some users will still have their EQ of choice.



As if there weren't enough options on the front panel, Redline Equalizer has more tweakables under the hood



Not only can you select a different EQ model per band, you can dial in its phase shift, too

It's just a phase

Analogue EQs and 'normal' digital ones introduce phase shifting, whereby some frequencies are delayed slightly in relation to others – a "frequency dependent delay," as the Redline Reverb manual puts it. The results of this can be unpredictable, but in general, phase shifting causes a subtle 'smearing' of the signal, especially noticeable on transients. This isn't always a bad thing, and is even partially responsible for 'that analogue sound'.

However, if you want to adjust the frequency content without introducing phasing, you'll have to use a linear phase digital EQ. Redline EQ goes a step further, enabling you to sweep the

phase shift from linear (ie, none), through typical analogue emulation... and beyond! The latter extreme won't be useful every day, but it is worth playing with on any rich sound source, as it adds some real character.

Further craftiness comes with the Dynamic EQ section. The best way to describe this is as a kind of threshold for the EQ, enabling you to control when EQ is applied based on the strength of certain frequencies. You could, say, add treble to a vocal track, but when the plug-in detects that the high frequencies are too strong (caused by sibilance, for example) it reduces the boost appropriately.

Delays ahead!

Our only real complaint is that, as of writing, some users are experiencing slight issues with the plug-in's delay compensation, whereby the wrong latency seems to be reported, making the plug-in's output slightly out of sync. This can be especially irritating on very rhythmic material, but as a short-term fix, it's easily compensated for by using the track delay controls in your DAW. There's an update coming that 112dB say will cure the problem once and for all, so before buying, we'd recommend hanging on for the update, or giving the demo a go to see if the problem afflicts your particular system.

Despite this caveat, we're giving Redline Equalizer full marks, but be sure to try it first, as only your ears can determine whether it's for you. And keep in mind that none of the plug-in's features offer night-and-day improvements alone, but when used wisely together, and with the plug-in placed on a number of channels throughout a mix, its effects can be greatly magnified. Make no mistake, this is a ground-breaking plug-in that should inspire many imitations. **cm**

Alternatively

PSP Neon HR

cm101 >> 9/10 >> \$149

One of the best EQs we've ever used, but not as flexible as Redline

ddmf LP10

N/A >> N/A >> \$0.50+

EQ with variable phase per band and pay-what-you-like pricing!

Verdict

For Vast array of EQ models

Offers smooth filtering sweeps

Nice graphical interface

Per-band EQ types

Some unusual features

Against Analyser is hard to see

Latency issues on some systems

Redline Equalizer is a well thought-out EQ with a unique and comprehensive feature set and a great sound

10/10

Contact info@112db.com
Web www.112db.com

Intelligent Devices MegaDelayMass \$49

A fresh take on the multitap delay, this crafty plug-in includes some very powerful parameter-modifying features

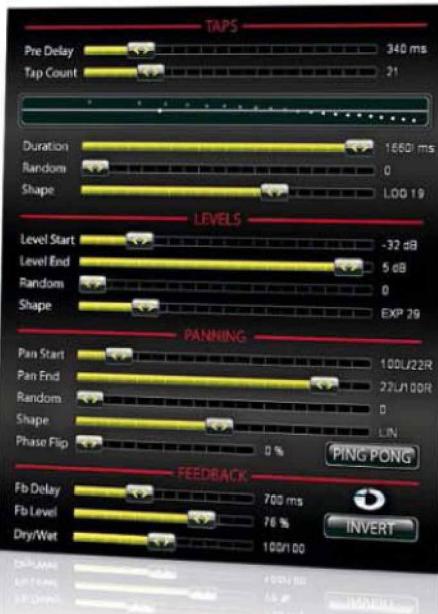
> Intelligent Devices impressed us with their software recreation of the classic Marshall Time Modulator, which was on the receiving end of a 9/10 score in **cm143**. However, the plug-in we're looking at this time treads new ground, taking the standard multitap delay concept and running with it. In essence, MegaDelayMass is a two-second multitap delay line with up to 100 taps. This is complemented by a host of clever features that modify levels, panning, feedback and the tap distribution itself.

To save you from the tedium of manually configuring 100 separate taps, you select an overall delay line duration and this is divided by the selected number of taps. These two parameters (along with a separate predelay) affect the spacing of the taps in time, and at the default settings, this spacing is linear - ie, there's equal distance between successive taps. However, you can also 'shape' this spacing, so that the distribution is logarithmic or exponential, and randomise timings on a sliding scale (0-100%). You get the same shaping and randomising parameters for levels and panning, and additional phase and ping-pong settings for the latter. To round things off, there's a single feedback loop with initial delay setting and phase inversion.

If this sounds complicated, help is at hand in the form of the tap timeline display. This indicates as dots the spacing, panning, level (as intensity) and phase (blue or red colouring) of the taps. The feedback loop also appears as a square dot - with phase and level indicated.

Tap dance

MegaDelayMass is a complex plug-in, so we'll explain how it works in practice. Say you start with a two-second delay and select four taps - a linear delay shape will produce taps at 0ms, 500ms, 1000ms and 1500ms (the first tap falls right on the original sound, unless you set a pre-delay). To control volumes, you set start and



end levels (-40dB to +6dB for each), and there are similar settings for panning.

But MDM can do so much more than just simple delay. First, an exponential setting for level, panning or timing gives a strong initial effect that 'winds down' over time. Conversely, a logarithmic setting will start slowly, gradually speeding up. So, with 50 discrete shaping options, you have excellent control over level, panning and timing 'curves', and taps can increase, decrease or stay constant in level over time. Factor in the ping-pong option and you can create some really cool stereo effects - see the boxout for a worked example.

So, any complaints? First up, MegaDelayMass doesn't yet sync to host tempo, although ID say this will be added in a future update - they say that AU and RTAS versions are forthcoming, too,



Heard MDM on acoustic guitar and a snare drum, then try the demo

as the plug-in is currently VST-only. Also, the overall delay time is limited to two seconds, including the predelay.

As expected, MDM really is at its best when creating 'out there' effects, and this focused functionality may limit its appeal. Then again, standard delay plug-ins are commonplace, so if you've had it with run-of-the-mill effects, you'll find that MegaDelayMass is a real tweaker's dream, delivering very individual sounds for those who are willing to put the time in. **cm**

Contact proaudio@intdevices.com
Web www.intdevices.com/proaudio

System requirements

PC Windows XP/Vista, VST host

Mac Intel/PPC CPU, OS X 10.4, VST host

Test system

Mac Apple Mac Pro Dual 3GHz,
3GB RAM, OS X 10.5.7, Steinberg Cubase
5, Ableton Live

Alternatively

Audio Damage Ricochet
cm125 >> 10/10 >> \$49

Only five taps but the multimode filter, tap-specific tempo sync and easy programming make it a hit

Expert Sleepers Multitap Delay

N/A >> N/A >> £Free
Cross-platform, four-tap freebie with filter and saturation controls

Verdict

For An enormously creative effect
Clever tap envelope system
Useful timeline graphic
Oddball random parameter
Reasonably priced

Against Quite a specific range of uses
No host tempo sync yet
Currently VST-only

Far from a bread-and-butter effect, MegaDelayMass's multitap madness comes into its own for creative uses

8/10

Make 'em bounce

MDM is rather adept at the 'bouncing ball' effect. Envisage the rhythm a rubber ball makes as it gets lower and bounces more frequently - check out Aphex Twin's classic *Bucephalus Bouncing Ball* for some prime examples! Here's how you do something similar using MegaDelayMass...

First, set the Pre-delay to 360ms and the Duration to 1640ms. Next, make sure the wet/dry balance is at the mid point (100/100). Now choose a tap count (21

works well) and adjust both the Level and Panning shapes to the mid point (linear). Zero all randomness settings and set both pan points centrally. Now set the tap shape to a logarithmic value (LOG 19 works well) and finish off by adding a little level decay, starting at -5dB and finishing on -25dB.

This achieves the basic effect, but you can try fine-tuning by adding exponential level decay (try EXP 27) and some panning (eg, a pan end setting of 40L/100R).

SoniqWare

MT-1 \$199



Multiband dynamics processor are nothing new, but unusually, this one offers four bands of transient tweakery

> It can be beneficial to split audio source material into separate frequency bands (eg, bass, midrange and treble) for processing purposes, and multiband effects are now commonplace in the computer musician's plug-in folder. While they can be harder to get to grips with – and can do more harm than good if used incorrectly – they do give you a degree of control and flexibility that's not found with single-band processors.

Compression, limiting and distortion are typical processes you'd find in multiband form, but MT-1 from Soniqware is a little different in that it's a transient processor – it enables you to boost or subdue the attack and release portions of your signal independently, in four frequency bands. The interface is much like any other multiband effect, with a graph displaying the crossover points and separate controls per band. The linear-phase crossovers work in a straightforward manner, and have three slope options (12dB/24dB/48dB per octave), and adjustable crossover frequencies (the minimum width of any one band is an octave, eg, 1.2–2.4kHz).

Harder, faster, softer, longer

The fun begins when you start using the controls to adjust the transient content of each band. You manipulate the attack and release (aka sustain) stages using gain (-/+12dB) and time controls for each. The latter dictate how long the attack and release stages are boosted or attenuated for, with ranges of 1–100ms for attack and 10–1000ms for release. For instance, with a short attack time, you can add a sharp 'click' to the start of a drum sound, whereas longer times will give more of a brutal punch. There are makeup gain sliders and solo/bypass switches enabling each band to be auditioned in turn – handy for fine-tuning settings. One downer is that the makeup gain is applied even when a band's processing is bypassed, making it



hard to set up 'like for like' comparisons. Also annoying is the fact that there's no global reset button, and resetting band crossover points can shift them to illogical positions.

On the plus side, the global Link switch enables you to (relatively) adjust the controls on all bands at once, which makes dialling in the exact amount of attack/release gain on all channels easy as pie, though, as we've said, a global reset button would be handy to return a preset to its default state. Worth mentioning is that the MT-1 can operate in stereo, left or right channel-only and mid/side modes to boot.

In operation, we attained some impressive results working with mixed-down percussives, with the multiband format enabling us to single out snare drums or hi-hats to be embellished with extra bite (or less, as the case may be). You can add thump to kick drums or, by pulling down the release gain of the lower band, reduce rumble, a bit like an expander. It's also great for fine-tuning and manipulating toms, and we achieved decent results on isolated sources

such as bass and vocals. When you want to add more attack on mixed program material, shortening the release alongside boosting the attack helps make the sound more percussive.

MT-1 is currently held back slightly by a few annoying glitches, but they're not dealbreakers, and SoniqWare say that they're working on an updated version that should put paid to them. Considering the sonic results MT-1 can achieve, we'd recommend giving it a try if you're after a more advanced transient-shaping solution. **cm**

Contact contact@soniqware.com
Web www.soniqware.com

System requirements

PC 512MB RAM, Windows XP/Vista, VST host

Test system

PC Intel Q6600, 4GB RAM, Windows XP SP2, Cubase SX3.1, Echo Layla 3G

Alternatively

Waves Transform Bundle
N/A >> N/A >> \$1200

This bundle contains TransX, a four-band transient processor

Eiosis E²Transienter
cm131 >> 9/10 >> €170

Not multiband, but this one has many advanced functions, including mid/side operation

Verdict

For Reasonably easy to use
A/B/C comparison very handy
Impressive sonic results
Clean sound

Against Preset system has issues
Some annoying interface quirks

MT-1 is easier to use than your average multiband dynamics processor, with a different sonic flavour to boot

8/10

As easy as A/B/C

Highly useful when dialling in any kind of subjective effect processing is good old A/B comparison functionality, which enables one to flip back and forth between different setups. The effects of dynamics processing can be quite difficult to judge, so we were pleased to see that MT-1 comes with A/B/C banks as part of its built-in program manager, with each bank containing 16 slots. You can load a preset into each bank, then flick between them by selecting A, B or

C, or simply create them by clicking on one and dialling in your own setups.

One downside is that browsing about in bank B takes the A and C banks to the corresponding preset slot, slightly reducing functionality. More worryingly, trying to load a saved preset using MT-1's preset manager resulted in an error stating that the FXP file was "inappropriate", though we were able to save and load via Cubase's preset system without a hitch.

Synthogy **PC** **MAC**

Ivory Upright Pianos £190



Space isn't a consideration when choosing a virtual piano, so is there a case for picking an upright model in preference to a grand one?

> When Synthogy launched the first version of Ivory, it set the standard for all subsequent sampled grand pianos. In fact, we went as far as to award this collection of three prestige instruments our top score of 10/10 in **cm**81.

Since then, we've also had the Ivory Italian Grand (**cm**109, 8/10), and now Ivory Upright Pianos is here. As its name suggests, this deviates from Synthogy's 'grand' path by bringing together four compact Joannas.

We should point out that this isn't just an expansion for existing Ivory owners - it can be used as a standalone or plug-in instrument. What's more, it doesn't have a great deal of direct competition: NI included an upright in its Akoustik Pianos, but that's been discontinued.

Installation of the 50GB, 5000-sample library takes some time (though you don't have to install all the pianos at once), and before you can start playing, you'll have to transfer your license to an iLok key (which isn't supplied).

Music software may have moved on in the last five years, but Ivory's GUI hasn't. In fact, aside from different piano graphics, what you see is practically identical to what was offered at v1.0. This will please Ivory veterans, but if you want a more contemporary interface, Upright's basic look and feel may come as a shock.

Still, it's certainly functional - nothing here will confuse. Furthermore, you do get a new Creaks & Clunks layer that can add a bit of character to your performances. It's possible to have a noise on every key, but this can be a little over the top - the second 'random' layer actually delivers greater realism. Beyond the main page lie the EQ/effects and Velocity settings.

Sounding board

As we mentioned, four separate instruments are included - more on these in the *Upright members* boxout - and, unsurprisingly, each sounds distinctly different. The Modern Upright is the brightest, and the best choice for more



contemporary styles, while the Vintage Upright does the business when you're playing classical pieces. The Honky Tonk, meanwhile, is a detuned delight, while the similarly off-key Tack Piano has a tone appropriate for soundtracking the arrival of Al Capone in a gangster movie.

In short, these hugely playable instruments sound just as good as Synthogy's previous offerings. The Uprights edition certainly doesn't let the Ivory brand down sonically.

The big question, though, has to be: who is this collection aimed at? Let's be honest: the average computer musician is probably only going to invest in one dedicated piano instrument, and when they do so, they'll almost certainly choose a grand emulation over this.

This being the case, we get the sense that it's aimed at professionals and studio owners who feel they need a piano for every eventuality. If this is the boat you're in, you'll find Ivory Upright Pianos to be a worthwhile purchase - everyone else can simply say 'job well done' and move on to more pressing software concerns. **cm**

Contact Time+Space, 01837 55200
Web www.synthogy.com

Upright members

The Modern Upright was sampled from Yamaha's U5, which sits at the top of the company's current range. This certainly has the tonal characteristics necessary to cut through in the mix, but if you're looking for something a little richer, the **Vintage Upright** will be more to your taste. This takes its samples from a 1914 AM Hume model that was built in America.

The Honky Tonk/Barroom Upright also has an American heritage - it's a 1915

Packard model (apparently the same as the one that used to sit in Boston's Cheers bar). Finally, the Tack Piano dates from the early 1900s - it takes its name from the tacks that are fitted to its hammers, which gives a percussive sound on each note.

Taken as a whole, Ivory Uprights covers a multitude of sonic bases - we think it's reasonable to suggest that, once you've got these uprights on your hard drive, you'll never feel the need to invest in any more.

System requirements

PC 1.3GHz P4 CPU, 1GB RAM, 7200RPM HD, 10GB space, Windows XP SP2, iLok

Mac 1GHz G4/G5/Intel CPU, 1GB RAM, 7200RPM HD, 10GB space, OS X 10.4, DVD-ROM drive, iLok

Test system

Mac G5 dual 1.8GHz, OS X 10.5, 1.25GB RAM, Apple GarageBand '09

Alternatively

NI Akoustik Piano
cm93 > 9/10 > EN/A

Recently discontinued - you might be able to get this in bargain bins

Propellerhead Reason Pianos
cm105 > 8/10 > £89

For Reason users, this three-piano ReFill (with an upright) is a winner

Verdict

For Four distinctly different uprights
They sound and play great
Tried-and-tested sampling engine
Pianos can be installed individually

Against Interface looks a little dated
If you've got a grand, do you need this?

Synthogy have done a fine job here, though whether there's much of a market for virtual uprights remains to be seen

8/10

cm mini reviews

A rapid-fire round-up of sample libraries, ROMplers and more

Samson

Go Mic £50

Format PC, Mac
Contact Korg UK, 01908 857100
Web www.samsontech.com

Samson's Go Mic is aimed at podcasters, musicians and field recorders, and designed to be used with laptops and netbooks – although any computer will do, of course. It's a tiny, plastic-shelled USB condenser microphone that folds out from a sturdy metal clip, via which it attaches to your laptop screen or anything else you like. The box shows it neatly clipped to the bezel of a pre-Unibody MacBook Pro screen – and looking impressively 'Apple' with it, it must be said. Owners of the more recent MBPs are going to be reluctant to recreate this setup, however: because of the thinner screen of the Unibody model, the angle of attack of the hinged half of the clip is too steep, so the sharp metal front edge of the clip clamps – with some force – directly to the glass. Er, no thanks...

Fortunately, the clamp, being quite weighty and fitted with four rubber feet, also doubles as a very stable stand, so you can just sit it flat on a table and angle the mic (attached via a ball-and-socket joint) as you see fit.

The mic itself can be switched between cardioid and omnidirectional pickup patterns, and features a 10dB pad (for cardioid mode) and a clipping indicator LED. There's even a

built-in audio interface, complete with minijack output for direct monitoring of the incoming signal, which is captured at 16-bit/48kHz quality.

The Go Mic not only looks great, it really does sound great, too. Recordings are detailed, spacious and accurate, and performance overall is certainly greater than you'd expect from a capsule of this size and price.

9/10



FaderPro \$99

The Art Of The Remix

Format DVD with DVD-ROM
Contact via website
Web www.faderpro.com

This beginners' guide to remixing is presented by one Vincent DePasquale, who explains a variety of general and remix-specific techniques using Nadia Ali's pop hit *Crash and Burn* to demonstrate. The resulting funky house remix, while not mind-blowing, does a great job of demonstrating the pertinent concepts.

The acapella and other materials are provided on the two DVDs that come with the product (there's a streaming version for \$89, too, including the same). Logic is the DAW used, but DePasquale does a fair job of keeping the techniques universal. The video runs to a substantial 420 minutes, so while it's not cheap, you get plenty of bang for your buck. The very basic nature of the first few chapters means they're of less interest to more advanced users, but there are still useful tips peppered throughout, and the video is divided into 41 chapters, which makes navigation a little easier. Overall, a good investment for those new to remixing and production in general, especially Logic users.

8/10



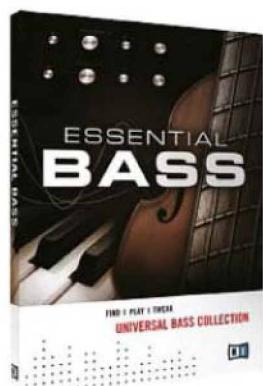
Native Instruments Essential Bass €69

Format Kore SoundPack
Contact info@native-instruments.de
Web www.native-instruments.de

Another month, another Kore SoundPack, and this one includes 200 acoustic, electric and synthetic bass sounds, ranging from plunking uprights to dirty DnB hoovers. The Kore Player's features work particularly well here, giving Essential Bass a real advantage over many traditional ROMplers. For example, in the case of the acoustic sounds, it's possible to set the level of the fret noises in the mix, and the synthetic sounds can be customised by adjusting filter, modulation and effect settings. Many patches also have a 'sub' control, making it easy to dial in the right amount of low end.

The sounds themselves are great: the sample-based patches are well recorded and sound realistic, and the synth sounds are punchy and warm. The dance-oriented ones in particular are impressive, being stylistically up-to-the-minute and of high sonic quality. Overall, a fantastic package that lives up to the high standards set by previous Kore SoundPacks. The price makes it decent value even if you're only interested in the acoustic and electronic basses.

10/10



White Noise Audio Software **bleep!Box** £5.99

Format iPhone/iPod Touch
Contact contact@bleepboxapp.com
Web www.bleepboxapp.com

Sticking to the tried and tested step-sequencing formula, bleep!Box is a simple app that can put out some serious grooves. It takes a little while to figure the control system out, but once you've got the hang of it, it's easy to put together loops and patterns, then tweak them in real time. As well as the main programming pages for composing patterns, you'll also find a couple of live performance options enabling you to loop/stutter, mute and preview parts. An updated version (which should now be available) will enable you to sequence patterns into songs.

Each pattern is composed using a maximum of ten parts, split into six drum instruments and four synths. The drum sounds are reasonably authentic 808- and 909-style hits (three kick parts, one snare and two hi-hats) all synthesised in real time. This might not sound like much, but the excellent synthesis engine makes it surprisingly effective. To offer more variety, all



the sounds can be triggered at any pitch from C0 to A8, meaning you can create all kinds of zaps, crashes and claps to throw into the mix.

The synthesis engine of bleep!Box is where the software shines, with eight waveforms, frequency/phase/ring modulation and dozens more variables to play with. The results are surprisingly usable and every parameter can be automated, too.

Although the app itself is stable during use, there are a couple of minor graphical glitches, that make it look slightly less slick than it otherwise would - hopefully these will be ironed out in the update. Overall, though, bleep!Box is a simple but surprisingly versatile step sequencer, that could also make a great performance tool. At this price, it's a bargain.

10/10

Xewton **Music Studio** £11.99

Format iPhone/iPod Touch
Contact support@xewton.com
Web www.xewton.com

The fact that an app like Music Studio can exist at all on a phone will astonish anyone who made music back in the good old Atari and Amiga days (or, indeed, anyone who ever thought they were 'it' with their hefty old-school brick phone). This is a fully fledged sequencer with a slick interface that makes good use of the iPhone's capabilities.

The Keyboard page is where most of the action takes place. It enables you to play up to two instruments simultaneously by splitting the screen horizontally. The iPhone touchscreen excels in this area and you can play some surprisingly complex parts once you get the feel for it.

Music Studio uses sampled instruments rather than synthesised sounds, with a selection of 21 presets to choose from (including pianos, drum kits, organs, brass, guitar and so on), but very little in the way of editing capabilities. The drum sounds are good, although it's a shame they have to be triggered using the keyboard interface - pad-style input would've been



preferable, clearly. The Tracks page offers mixing and editing of up to 128 tracks, and Music Studio has excellent sequencing capabilities with reassuring attention to detail. Adjustable time signature? Quantise? Transpose? Note velocity? It's all right there.

Finally, the Effects page offers a basic but useable reverb, tempo-synced delay, three-band EQ and an amp simulator with adjustable overdrive. Each of the effects can be applied to the master out or used for FX sends. Once your track's finished, you can export as WAV, but we'd

like to see the ability to export tracks as MIDI in future versions, enabling you to take your ideas into your DAW and develop them further using production-quality sounds.

Although Music Studio lacks any synthesis and sampling capabilities, it's excellent at what it does and would make a great tool for jotting down ideas on the run or even for writing quick demos. This is already a very serious sequencer and we'll definitely be keeping an eye on it to see how it develops.

9/10

Soundware round-up

Mutekki Media
Kolombo's Secret House £85

Contact via website
 Web www.mutekki-media.de
 Format WAV, Ableton Loops, Apple Loops, REX, EXS24, Kontakt 2/3

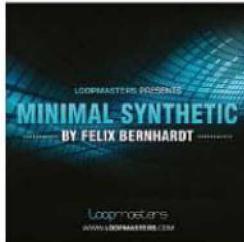


Olivier Grégoire, also known as Kolombo, bursts on to the Mutekki catalogue with this tech house, deep house and progressive sound library. He delivers over 630 unique samples in the form of loops, bass shots, FX, rhodes and synths. It didn't take us long to recognise the bright, clean and deep character of the sounds on this DVD. Everything sounds edgy and full of flair. Generally, the grooves are as funky as they come, the stereo image is wide, the bottom-end is solid, the high-end is sweet and there's a particular authenticity. All loops are at house tempos 125 and 128bpm.

10/10

Loopmasters [DOWNLOAD](#)
Minimal Synthetic by Felix Bernhardt £25

Contact info@loopmasters.com
 Web www.loopmasters.com
 Format ReFill, Apple Loops, Stylus RMX, Acid WAV, REX2



Felix Bernhardt is a minimal house and techno producer on his way up the industry ladder. Here you'll find everything you need to create an authentic minimal track with a heavy bias towards the kitsch and glitch style that has currently taken over the scene. Most of the sounds are the results of a lot of clever synth work. That retro videogame feel lingers throughout the entire library. There are one-shots, as well as loops at 127bpm. The drum loops and kits particularly impressed us. With over 1170 unique samples in total, it'd be hard to find better value at this price point.

10/10

Loopmasters [DOWNLOAD](#)
Jim Rivers £20

Contact info@loopmasters.com
 Web www.loopmasters.com
 Format WAV, Acid WAV, REX2, ReFill, Live Pack, Apple Loops, HALion, Kontakt, EXS24, SFZ, Stylus RMX, Live Presets, NN-XT



This is the second release in the Global Underground sample series. Jim Rivers has produced a slower tempo, deep house and tech house style pack this time. Although there are only just over 150 unique samples, they're all very well done. The drum loops alone make it a worthwhile investment. Jim demonstrates a very advanced ability with percussive loops. The grooves vary tremendously, but he's able to pull off the loosest shuffles that will no doubt translate to some seriously heavy dancefloor action. There isn't a great deal of synth work, but you'll find stacks of inspiration among these very diverse and well-produced samples.

8/10

Zero-G
Brazil Chillout £60

Contact Time+Space, 01837 55200
 Web www.timespace.com
 Format Acid WAV, Apple Loops, Stylus RMX, REX2, EXS24, Kontakt, Reason NN-XT

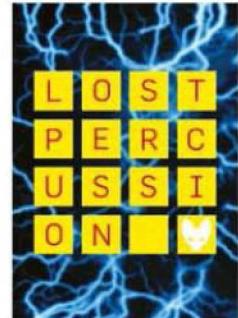


Brazil Chillout brings 32 construction kits, packed with cool, soothing bossa nova and samba performances on a contemporary tip. You'll find a beautiful selection of live performances, teasing you with euphoric chord progressions on electric piano, guitar, acoustic bass and even some light synth work. All of the drum and percussive elements are also broken down, so there's huge creative potential. As well as those kits, Zero-G have provided additional drum elements and stereo guitar riffs. The sounds are exceptionally well-recorded, and are all in 24-bit format.

9/10

Dark Side Of The Tune [DOWNLOAD](#)
Lost Percussion \$9

Contact info@darksideofthetune.com
 Web www.darksideoftetune.com
 Format WAV, MPC



Lost Percussion is another trip back to the MPC format (although the WAV files are on there for non-MPC users). It comprises 64 single-hit samples that could be categorised as percussion. The sounds definitely have an authentic vintage character about them, almost as if they were rescued from a 1980s vault. There's also a distinct quirkiness to these hits that's sure to find use alongside more typical drum sounds within a huge variety of genres. However, if you're into a slightly low-fidelity and eccentric sound, you'll likely find that this set is inspiring as a standalone collection.

8/10

Push Button Bang [DOWNLOAD](#)
Dark House £25

Contact info@loopmasters.com
 Web www.loopmasters.com
 Format WAV, Acid WAV, REX2, ReFill, Live Pack, Apple Loops

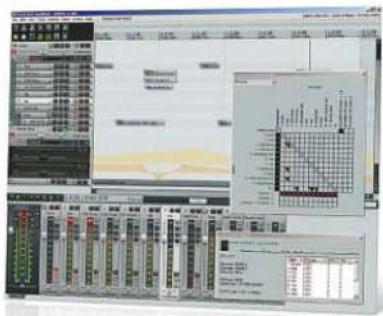


Dark House is a sample collection from Push Button Bang that exhibits outstanding sonic quality. It boasts over 1135 unique samples, 675 of which are one-shots (the rest are loops), all split into appropriate categories and sub-categories to make your job as quick and easy as possible. Even though it's been designed with harder, darker house flavours in mind, there's definitely scope for use within a wide range of different styles - even outside of house. You'll find all manner of obscure FX noises, super-rich synth sounds, drums and percussion, and every sample is labelled with a root key and tempo to help you along.

10/10

cm/recommends

The best new gear from the last three issues...



Cockos Incorporated PC MAC Reaper 3 £60

Rating 9/10

Reviewed cm144

Contact support@cockos.com

Web www.reaper.fm

What is it? A shareware DAW that's considered by many to be a match for any of its big name rivals. Updates are regularly released, and these days Reaper users can enjoy PC and Mac compatibility, élastique 2.0 timestretching, transient-based beat-slicing, REX2 support, a parameter modulation system, nested track folders and a whole lot more.

Verdict "Major DAW manufacturers have good reason to fear the Reaper: it's a viable alternative with some distinct advantages"

Apple MAC Logic Pro 9 £399

Rating 10/10

Reviewed cm143

Contact Apple UK, 0800 0480 408

Web www.apple.com

What is it? An update to Apple's ever-popular Mac-only DAW, this one took us by surprise, as it was entirely unannounced. Logic Pro 9 remains part of the Logic Studio bundle, and highlights include enhanced audio editing functions, all-new virtual guitar amps and effects, and Flex Time, which enables you to warp audio as you see fit.

Verdict "Logic Studio remains fantastic and feature-stuffed, and Logic Pro 9 is perhaps the best all-round DAW"

Propellerhead PC MAC Record £229

Rating 9/10

Reviewed cm143

Contact Sound Technology, 01462 480 000

Web www.propellerheads.se

What is it? A self-contained recording program that can also 'merge' with Reason (if you have it installed) to form one super-app. The big selling points of Record are its fuss-free interface, rock-solid performance, excellent real-time timestretching and terrific-sounding mixer that emulates an SSL console. There are basic built-in instruments, and virtual guitar and bass amps from Line 6, too.

Verdict "At its best when used alongside Reason, but this is a very solid start for Record"

What we've been using this month



Ronan Macdonald
Editor

Novation's Launchpad is the perfect lower-priced alternative - or, indeed, companion - to Akai's APC40. It's great to see the Ableton Live controller market finally hotting up!



Lee du-Caine
Deputy Editor

Having got my hands on Universal Audio's superb recreation of the world's first digital reverb device, the EMT 250, I now realise that my life would be empty without a little EMT.



Tim Cant
Multimedia Editor

I've been experimenting with MDMCM this month. No, it's not a new rave drug, but something even better: a sophisticated delay effect that's yours free with this very issue of cm!



Craig Hitchings
Production Assistant

I've been getting to grips with NI's Absynth 5. And just like the famous green drink, this instrument takes you to some very weird places with absolutely no idea how you got there.

>Your questions answered

Q&A

Fretting about what should be on your shopping list? Having problems getting your software to play nice? Or do you need to know how a certain artist gets their signature sound? Send your questions to cmhelp@futurenet.co.uk

DAWs of perception

Question After almost three years of using Reason, I'm going to buy a complete and powerful DAW to use as my main sequencer and stick with it for the rest of my musical life. After some research, I've narrowed my choices down to Logic Studio and Cubase 5.

I'm going to mostly work with virtual instruments. Cubase looks very interesting, but I have read much better reviews and feedback about Logic in terms of overall features, MIDI editing, sound engine, and bundled instruments and effects. The fact that nowadays almost every professional music producer uses a MacBook Pro and a copy of Logic makes me think that if I'm really serious about being an electronic musician, I should choose a Macintosh computer over a

PC. I'm tempted to switch to the Mac platform, then, but there are some issues...

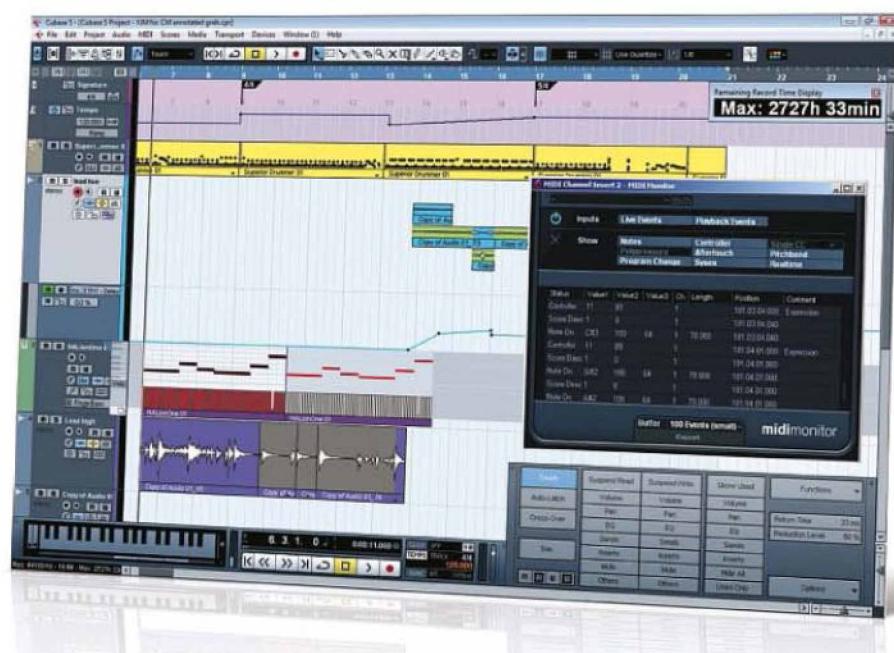
Apple products cost more than their PC equivalents, and since I live in Iran, they are even more costly: \$400 to \$500 more than compared to the US. I would only be able to afford a MacBook Pro 13" or perhaps 15". Also, considering the spec of the MacBook Pro that I can afford (Core 2 Duo 2.53 GHz), I'm thinking that I may not have the same power that I have now with my current PC (which has a quad core processor and 4GB RAM).

I read somewhere that many more plug-ins can be loaded in a Logic Pro project compared to the same project on the same system that runs another DAW such as Cubase - is that true? Is it worth switching platforms to become a Logic Pro user?

Kamal Tehrani

Answer First of all, it's perfectly possible to make great-sounding, pro-quality music in Cubase, Logic or any other professional DAW. While many producers favour Logic, plenty of others use different software, from Ableton Live to Pro Tools. What really counts is how use the DAW, not what make it is.

We reckon that Logic beats Cubase in terms of included plug-ins and audio content - indeed, many producers use little more than the bundled instruments and effects. However, in pretty much every other area, Cubase is just as good, and even has its own advantages, such as built-in graphical pitch correction, superb audio editing and, of course, cross-platform compatibility. Perhaps more important than pure features, though, is the fact that each of these apps has its own workflow - the DAW that looks best on paper just might not 'click' with



Steinberg's cross-platform Cubase 5 is an excellent choice for creating pro-quality tracks, but whether you plump for it over other DAWs depends largely on your working methods and individual tastes

> Step by step

Working with ASIO4ALL



Alan Davis' latency problems aren't caused by his Casio CTK-800 keyboard - his audio driver's the culprit

you in the real world.

You won't see much of a difference in the amount of plug-ins that you can load in Cubase and Logic (assuming that you were using the same third-party ones in each), so we'd suggest that you need to decide how much Logic's superior bundled plug-in collection is worth to you.

Bearing in mind the price of Macs in Iran, we recommend that you stick with your PC for now and get the cut-down Cubase Essential 5 (RRP £149). This can be upgraded to Cubase 5 or Cubase Studio 5 should you find it too limited for your needs, and if you decide that it's really not for you, then you can make the switch and go down the Mac route instead.

If you later decide that Cubase 5 is the way to go, you may want to invest in some plug-ins to complement the included built-in effects and instruments. For the latter, Native Instrument's Komplete 6 is an absolute behemoth of a bundle and is well worth its £499 RRP; and if you'd like some more effects, then u-he's excellent Uhbik collection is a steal at \$199.

Latent function

Question I'm having difficulty playing plug-in synths in real time - there's always a delay between pressing the key and the note being produced. I have an HP Pavilion with an AMD Sempron 3000+ processor, Windows XP, a Realtek AC97 soundcard, and I'm using a Casio CTK-800 as my MIDI master keyboard via USB. The software I use includes Cakewalk Music Maker, XT Software energyXT and your own Computer Muzys. Is there a simple solution or should I be looking at binning the lot and starting again?

Alan Davis

"In simple terms, larger buffer sizes give your computer more time to work out its audio calculations but result in the delay that you're experiencing"

Answer It sounds as though you need to take a look at your audio driver settings - the audio driver is the software that your music applications use to talk to your computer's audio hardware. The setting that dictates how long it takes the computer to generate the audio is known as the buffer size. In simple terms, larger buffer sizes give your computer more time to work out its audio calculations but result in the delay that you're experiencing. You need to set your driver's buffer size low enough that the delay becomes acceptable (or even unnoticeable), but not so low that your computer doesn't have enough time to complete its calculations, as this will result in the audio sometimes breaking up or otherwise becoming quite distorted.

You're using your PC's onboard audio rather than a dedicated soundcard or audio interface, which typically gives sub-par results. One of the reasons for this is that such systems don't have their own ASIO driver, which is a type of audio driver designed specifically for real-time music production. Luckily, help is at hand in the form of ASIO4ALL, which is a generic Windows audio driver built to work with most audio devices. See the walkthrough *Working with ASIO4ALL* for a step-by-step guide to installing and using this very handy freebie.

Preparing the way

Question I've bought a killer laptop, and I'm planning on buying the new Cubase 5 along with a Lexicon audio interface and a small MIDI controller. Is there anything I can do to optimise my laptop before I install Cubase? I know for graphics and things like that you can overclock your processor. Is there anything like that to help Cubase run on



1 > The first step is to install ASIO4ALL, which you'll find on the **cm** DVD in the **Software\PC Software\Library\ASIO4ALL** folder. Follow the onscreen instructions, and, once the installation is complete, run your music software of choice - we're using energyXT 2.5Core **cm** Edition, which you can find in the **CM Studio** folder on the disc.



2 > Open **File>Setup** in energyXT. Click the **Audio** tab at the top of the window that appears, then set the driver type to **ASIO** and the driver to **ASIO4ALL v2**. Click the **Advanced** button to bring up ASIO4ALL's control panel. You can check that ASIO4ALL is using the correct audio device by clicking the spanner icon and inspecting the WDM Device List.



3 > Click the spanner icon again. Reduce the latency using the **ASIO Buffer Size** slider, then close the control panel and the Setup window. Test the latency by playing a virtual instrument with your MIDI keyboard. Lower the **Buffer Size** until the point where the audio 'breaks', then raise it slightly. If you're using a lot of instruments and effects in a project, you may find you need to turn the buffer size back up.

> Step by step

Making scratch effects with Gross Beat



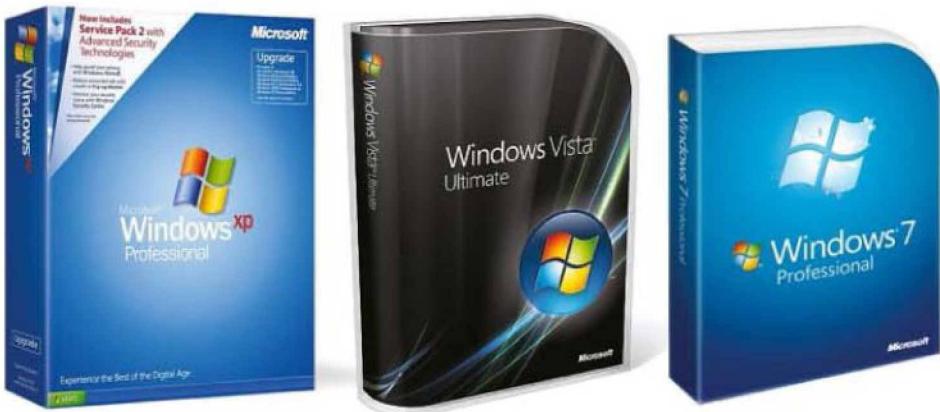
1 > Install the effect and launch your DAW. Copy **Hip-HopBeat.wav** from the **Tutorial Files»Q&A** folder on the **cm** DVD to your hard drive. Next, drag it onto an audio track in your DAW, set the tempo to **90bpm** and add Gross Beat as an Insert effect.



2 > Gross Beat enables you to manipulate two parameters - **Time** and **Volume** - to create effects. The large grid on the right-hand side of the interface is used for this. You can do this from scratch (ahem), but it's much easier to use a preset. Click **Select Preset** in the bottom right-hand corner of the screen and pick **Turntablism**.



3 > Now you can pick from the preset Time and Volume patterns using the grids on the left. Start by using **Scrt Patt 1** for both options, as we have here. This creates a simple scratching effect. Then try different combinations of presets. Once you've got an effect that you're happy with, use your DAW's audio export feature to render a wave file for use in your track.



We'd recommend Windows XP over Vista for music production, but Windows 7 has the potential to be the best Microsoft operating system yet for computer musicians - and everyone else!

my PC laptop without any hitches with, for example, latency and suchlike?

Tim O'Leary

Answer The best way to prepare your PC for running a serious music application like Cubase 5 is to keep it free of unnecessary software, which can slow down your machine's boot times and take up valuable system resources. If you can avoid using the machine as your web browser, that's a good start.

Other things that you can do to optimise Windows for audio include the following: turning off Windows sounds in the Sound and Audio Control Panel; setting the **Performance Options»Visual Effects** setting to **Adjust for Best Performance**; changing **Processor Scheduling** to **Background Services** (which can be done in **Control Panel»System»Advanced Tab»Performance Settings»Advanced Tab**); defragmenting the hard drive; storing audio data on a different physical drive to the one your machine's operating system is on (only of real benefit if you're running a desktop computer); and making sure that disc compression and indexing services are disabled by right-clicking your system drive icon and choosing **Properties**. Also, make sure you're using the latest hardware drivers and versions of your software.

Finally, if you bought your laptop recently, it's likely that it's running Windows Vista. Even Microsoft acknowledge that Vista is one of their "less good" products, and you'll probably find that upgrading to Windows 7 or even downgrading to XP gives you much higher performance and a better user experience.

Head scratcher

Question How can I make hip-hop scratch loops from samples like kicks, snare and

vocals? I'm currently running Reason 4, Cubase SX3 and FL Studio 8 XXL.

Bornchild

Answer There are several plug-ins that emulate vinyl scratching effects, but we've found the most authentic to be Image-Line's Gross Beat. While it's not totally perfect, it does an excellent job and you can download the demo from www.image-line.com to give it a try. See *Making scratch effects with Gross Beat*, left, for a step-by-step guide.

Requesting samples

Question I'm looking for a selection of samples that I can use to create my own loops and tunes with. I'd like orchestra, drum 'n' bass, dub, reggae, trance, sci-fi and synthesiser samples. Are there some packs that you can recommend, and do you have a suggested retailer from which to buy samples and plug-ins from in the UK?

Jon Neale

Answer Time+Space (www.timespace.com) and Loopmasters (www.loopmasters.com) are the major players in UK sample library distribution, and both have massive numbers of collections to choose from, including downloads. You can keep up to date with the latest libraries by our *Mini Reviews* section every month, but to get you started here a few recommendations...

Garritan Personal Orchestra (£99 from Time+Space) is a great collection of orchestral patches and comes with its own Aria Player plug-in, meaning you don't need a third-party sampler, such as HALion or Kontakt, to be able to use the patches.

Reggae fans will enjoy Creative Elements Vol

"You'll probably find that upgrading to Windows 7 or even downgrading to XP gives you much better performance"

22: Reggae Connection, which can be downloaded from Time+Space's website for a mere £9.78. The company also offer a sci-fi and synth sounds library download in the form of Radiophonica, which will set you back £24.42.

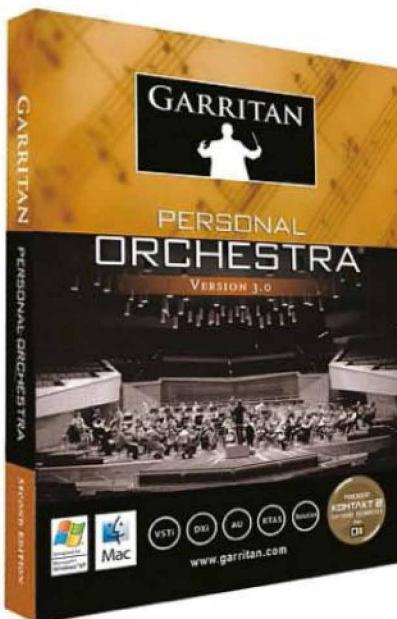
Loopmasters' Artist Series packs are where it's at for upfront dance styles, with libraries from greats such as Danny Byrd and Dino Psaras that will set you back between £20 and £40 depending on which format you plump for.

A change of scenery

Question I'm thinking of upgrading my studio and I'm starting off with my monitors - that's screens not speakers.

At the moment, I'm using two 19-inchers:

Garridan's Personal Orchestra brings a wealth of fantastic orchestral samples together within the easy-to-use Aria Player



one for my Cubase project and one just in front of me for my VSTs. I'd like another monitor, so I can have Cubase's mixer on a separate screen. I've used the existing video out on the back of my PC, and in Windows XP, it only gives me the choice of a dual-monitor setup. Do I need an extra graphics card?

Daniel Potter

Answer If you've used up all your graphics card's video outs, you will indeed have to buy a new card, either in addition to or replacing your existing card. If your computer's motherboard has two video card slots (check with Dell if you're not sure and don't want to open up your PC yourself), you can simply buy another graphics card and use that as the output for the third monitor.

If your computer only has space for a single card, you may have to replace yours with one that's capable of hosting three monitors, such as the Quadro NVS 420 (£436). We spoke to Ben

Question

How do I make those gritty, in-your-face Bassnectar bass wobbles using Albino?

Adam Clark



1 > Albino is handily equipped with an initialise preset. In the Master section, select the **Diverse Sounds** soundbank, and choose the **z_initial** preset from the bottom. It's a fairly neutral starting point, with just one oscillator activated, and a basic filter configuration.

2 > Set Osc 1's **Waveform** all the way over to the square shape, raise the pitch by **1 Octave** and turn the **Volume** knob to about 12 o'clock. In the Master section, you'll want to set the **Voices** to **Mono** for easy playing and programming later.

3 > Next, set Filter 1's **Type** to **LP24** in **Silk** mode. Switch the **Saturation** to mode **3** and raise its knob to about 10 o'clock. Maximise the **Tracking** amount, set a **Cutoff** of about **1500** and a **Resonance** of about **30**. Push the **1 Bal 2** knob back to **1** and copy our Mod Matrix settings.



4 > Activate Osc 2 and make sure it's in **Digital** mode. You'll find that it creates different tones through Filter 1's saturation stage, depending on the pitch and volume. Raise the **Octave** to **1** and try **Ctrl+clicking** the **Volume** for an appropriate tone.

5 > Now activate Osc 3 in **Digital** mode. We'll keep this in its original **Octave** to add that deep grit that Bassnectar achieves. Set the **Waveform** to **Spectr51** (there are a few other options that will sound just as good, too). Set its **Volume** to about 3 o'clock.

6 > Finally, for even more grit, activate FX1 as a **LoFi** effect and experiment with the settings to generate the kind of sandy distortion that fits your track. You can also set **LFO 1 Frequency** to sync to tempo. Here, we're using a groovy **8T** pattern.

Berraondo, Nvidia's PR Manager for the UK and Northern Europe, who suggests, "A Quadro solution is recommended for the pro market. For a home user, it would be more cost effective to place two GeForce cards in one PC, then output to multiple monitors." To do this, you'll need to replace your computer's motherboard with one that supports two cards (if your current one only supports one graphics card), or get an external video interface such as the IOGear USB 2.0 External DVI Video Card, which we found for \$100 at www.iogear.com.

An alternative solution is the Matrox TripleHead2Go, which connects to your computer's existing graphics card or USB port and can run up to three monitors, though they have to be at the same resolution and Windows will regard them as a single desktop rather than three individual ones, which may have an impact on the way you work. Head over to www.matrox.com for further details.

Samplers vs audio tracks

Question I'm about to invest in a music-making setup, probably consisting of Cubase 5 and some select plug-ins. I'm unsure whether or not I need to buy a sampler instrument, as Cubase can play samples back on its audio tracks. I want to make a variety of dance music - do I definitely need a sampler?

David O'Sullivan

Answer It's possible to make sample-based music using a sequencer's audio tracks, though these generally don't offer the same depth, flexibility and sound manipulation possibilities that samplers do. If you want to play melodies and chords, it's much easier to use a sampler, and indeed, if you want to be able to play samples in real-time via a MIDI controller and use filter envelopes or LFOs to modulate the pitch, for example, then it's a must.

As you probably know, Cubase doesn't have a built-in sampler (its HALion One is a ROMpler for playing built-in preset patches), but you can download the handy UVI Workstation for free from www.uvisounds.com. This fantastic freebie lacks the ability to map samples to different keys, but if you want to play back and process the occasional pitched sound, it's ideal. PC users can also enjoy the free Shortcircuit (www.vemberaudio.se) or HighLife (www.discodsp.com), both of which enable you to trigger samples on different MIDI notes.

If you decide that you require a sampler and the freebies aren't cutting it, the best option is Native Instruments' sampling leviathan Kontakt 4. At €379, this is an expensive instrument, but for sample-tweaking potential, it's hard to beat. And if you're going to invest in Kontakt 4, then consider Native Instruments' Komplete 6, which is €120 more, but includes a whole arsenal of other instruments and effects. **cm**

Question

How do I make the midrange synth sound in *Lost Weekend (The Qemists Got Your Money Remix)* by The Qemists? *Joe Ellam*



1 > Let's use Native Instruments' Massive for this one. First, we need to generate the basic growling, Reese-like texture. From the default state, go to the **Voicing** tab and set **Unisono** to 3. Activate **Monophon** mode, followed by **Pitch Cutoff** and slide the bar until it's about a third of the way across.



2 > Set Filter 1 to **Bandpass** mode and set the **Ser Par** slider on the left roughly in the middle. Set the **Cutoff** to about 12 o'clock and turn both the **Bandwidth** and **Resonance** to around 10 o'clock. This produces quite a thin sound, but we're about to wobble it up with an LFO...



3 > Click the **5 LFO** tab and drag the crossed arrows icon to control Filter 1 Cutoff from about 10 to 2 o'clock. Now push the **Rate** up slightly, deactivate **Restart**, and set the **XFade Curve** to its maximum value. You should have some slight flutter going on now.



4 > Activate Filter 2 and set it to **DoubleNotch** mode. Raise the volume to the max, turn the **Resonance** down to 9 o'clock and minimise the **Cutoff**. Finally, set the **Mix 1 Mix 2** slider to just below half-way up. This extra filter is going to provide the heavy phaser effect.



5 > At the top of the interface, select the **Attributes View** to access the Macro Control section. Click where it says **N.A.** on Macro 2 and set it to **1.ModnWheel**. You can set 1's destination to **N.A.** as a quick way of clearing that assignment.



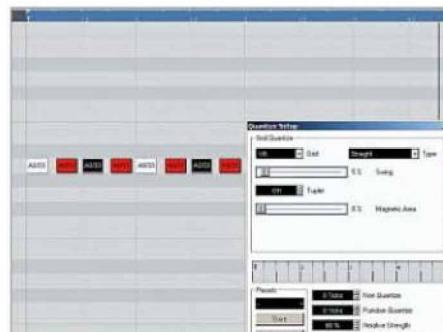
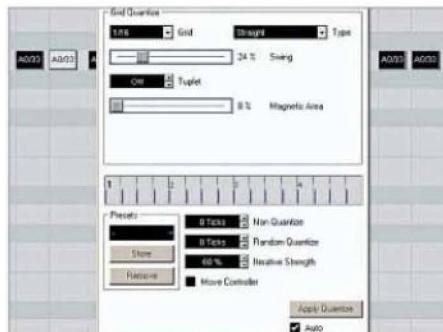
6 > Back in **Synth View**, drag the crossed arrows icon from **Macro 2 to Filter 2 Cutoff** and push the assign amount round to maximum. Now you can use the modulation wheel on your MIDI keyboard to control the phasing effect. Alternatively, you can program it in using MIDI CC 1.

Question

How do I create a pumping, Michael Woods-style electro bassline that fits with a house kick? *Pascal Hoberg*



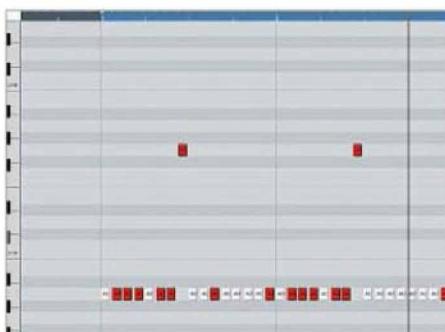
1 > For this example, we're using V-Station Powercore, but you'll be able to follow along with the native version if you prefer (www.novationmusic.com). Either way, start by clicking the down **Program** button, to get to the empty **User 499** patch. This is just a simple saw waveform with nothing fancy going on, but we'll soon change that...



4 > Assuming you have a kick on every beat already, open up the MIDI editor for your electro house bass. One bar will do to start off with. Program all 16th notes on A0, then remove any event that lands on a beat, and reduce all of the note lengths by 1/64.

5 > We're using Cubase, but any DAW will do. Select all of the MIDI notes and enter the **Quantize Setup** from the **MIDI** menu. Set the **Grid** to **1/16**, click the **Auto** checkbox in the bottom-right hand corner, then drag the **Swing** slider until you have a slightly funkier pattern - we go for a setting of **24%**. Click **Apply Quantize**.

6 > Now select every note that falls on the offbeat (1.3, 2.3, 3.3, 4.3, etc), enter the **Quantize Setup** again and this time set the **Grid** to **1/8**. We're only going to add the tiniest bit of **Swing** this time. Try about **5%** using the same method as before, then apply the new settings.



7 > In Cubase, you can click the MIDI part and select **Part To Groove** from the **Advanced Quantize** menu if you want to reuse it later. To write your bassline, experiment with removing (or simply muting) some notes, and vary the pitches once in a while to create musical interest.

8 > After your usual channel inserts to enhance the bass tone, add Cubase's compressor on the bass channel. Deactivate **Auto Make-Up**, and push the **Threshold** up to **0** for now. Turn all of the other knobs (except **Ratio**) as far left as they'll go. This is a nice, easy compressor setup from which to get started.

9 > Activate the sidechain on the compressor and send the kick channel to the bass channel compressor's sidechain input. Now go back to the bass channel compressor and adjust the **Threshold** and **Release** until you get the desired amount of pumping and a tight, dancey groove. We're done!

cm focus

HARDCORE

We reveal the production and compositional techniques involved in getting that authentic hard dance sound...



ON THE DVD
TUTORIAL FILES

You'll find samples, vocals and stems of our track, and the full mastered mixdown on the disc.



> Hardcore is a word that's been used to describe many kinds of music, from punk to hip-hop, but the type we're going to look at in this month's cm Focus is hardcore dance. In the early 90s, the UK's hardcore rave sound comprised a variety of styles, including techno and DnB. As these styles began to evolve and move away from each other stylistically, a genre known as happy hardcore developed.

Happy hardcore retained the elements that were diminishing in DnB of the time, including uplifting piano breaks, sped-up vocal samples and techno stabs. By 1994, happy hardcore was a quite distinct entity from techno and drum 'n' bass, although it was heavily influenced by the banging kick drums of the former and the cut-up breakbeats of the latter. As the style developed, the influence of the bouncy Scottish techno sound and the 'naive' melodies of Eurodance began to filter through. Eventually, the breakbeats and pitched-up vocals gave way to gabber-esque distorted beats, original vocals and off-beat synth stabs. By 1996, the junglistic happy hardcore typified by early Kniteforce and Just Another Label releases had all but disappeared, replaced by stompy, vocal-oriented tracks like Force & Styles' *Heart of Gold*.

Following its mid-90s inception, the style has been the subject of evolution rather than revolution, becoming more refined and better produced. Established names like Breeze & Styles (left, top), Hixxy, Scott Brown and Sharkey remained popular while new acts such as CLSM (bottom), K-Complex

"The style has been the subject of evolution rather than revolution"

(middle), Gammer and Re-Con made their presence known. Eventually, compilation series such as *Clubland X-Treme Hardcore* and *Bonkers* took the genre into high-street shops, and hardcore remixes of commercial dance tracks were the norm as the lines between trance, hard house and Eurodance became more blurred.

In this tutorial, we'll look not just at production techniques you can use to create a stormin' hardcore anthem, but also musical ideas you can apply to keep up your energy levels. On the disc, you'll find our six-minute hardcore epic, as well as samples, vocals and stems of each mix element. cm

> Step by step

Laying down a hardcore beat

POWER TIP

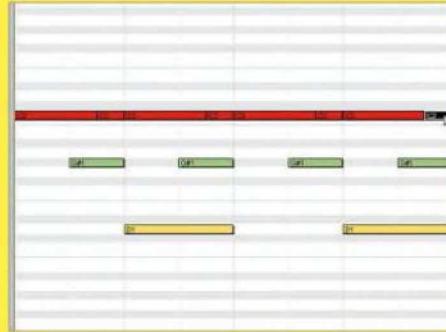
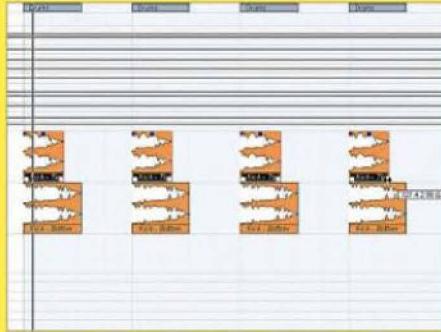
> Beat Dis!

No hardcore track is complete without a bangin' beat, and the kick drum is pivotal to this. Samples are your best bet, and in fact most of the drum sounds in this tutorial are from cm114's 2007 Hard Dance collection - this is an excellent resource for such sounds. Other sample packs worth investigating include those from Vengeance-Sound and Sounds Of Revolution. If you can find a kick that works for you straight out of the box, then great. However, if you want something original, you could try layering kick drums to, for example, combine the attack of one with the body of another, as we'll be demonstrating here.



1 > First things first: set your tempo to a slamming 170bpm! We've got two kicks here, on audio tracks, placed on each beat of the bar: **Kick - Top.wav** and **Kick - Bottom.wav**. The first is used for its clicky attack, while the other is low and booming. By using a high-pass filter and 5kHz boost on the former, we can isolate its clicky quality. We also cut an annoying resonance at 10kHz.

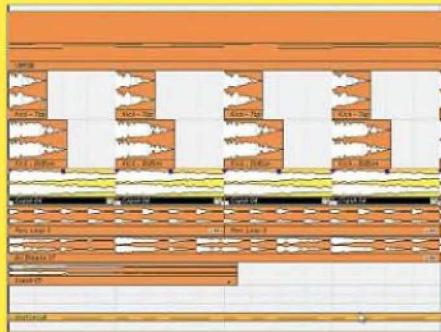
2 > As for the 'bottom' kick drum track, we use Cubase's EnvelopeShaper to suppress the attack (so that it doesn't clash with that of the clicky kick). We also apply EQ, cutting at 250Hz - this is purely to taste, rather than a rule! Now we can easily balance the elements of our kick sound - click and boom - by setting the levels of the two tracks in the mixer.



3 > To make life easier, we create a new Group Track and route both of the kick drum sounds to it, so that we can easily control the overall level of our custom kick drum and apply effects to it: we add EQ (again, there's no special formula) and PSP's MixSaturator2 to overdrive the bass slightly using the **Low** section (this helps make it more audible on smaller speaker systems).

4 > This kick sounds heavy, for sure, but it'll clash with an offbeat bass because it rings out from one hit to the next - we need to cut it off halfway through the beat. Select all the 'bottom' clips, then use the clip handles to adjust their lengths (hold **Ctrl** in Cubase to disable snapping) so that it's approximately half the length of a beat, then use the upper-right fade handles to create a fadeout, to prevent clicking. Do this with the 'top' too, till you get a tight and punchy kick sound.

5 > The other percussion is less critical and most of it is more easily dealt with using MIDI - for our sound source, we use Cubase's Groove Agent One (in multiple output mode) loaded with samples. Shown is one bar of our basic beat: the green note on the eighth-note offbeat is an open 909-style hi-hat, and the yellow hit is a snare on beats 2 and 4. The red ride cymbal (mixed quietly) plays on every beat, with an extra 16th-note hit just before the beat, to drive it along.



6 > Note that we can set the length of each note via MIDI (Key Hold mode must be enabled in Groove Agent One), to chop off the snare's tail, and, of course, 'close' the hi-hat. To big up the snare, we slam it through a UAD LA2A compressor, into a UAD Harrison 32C EQ, then into 2CAudio's Aether reverb, using a small, tight reverb with no early reflections and 100ms predelay to add a stereo 'shadow'.

7 > To lend more energy to the beat, a 'tambourine' shaker loop (**Perc Loop 3.wav**) playing 16th-notes is added, as is an extra hi-hat playing a 't-t-tscht-t-t-tscht' pattern. A breakbeat (**DJ Breaks 37.wav**) plays quietly in the background, with a band-pass filter on the 700-8000Hz range. A sizzling crash/ride sound (**Crash 04.wav**) on every quarter note is used sometimes (eg, chorus) to 'excite' the beat.

8 > So those are the main components of our beat, though we won't necessarily want them all playing at once for the whole track. And there's no rule that you have to use a four-to-the-floor beat at all times, either - as part of our bridge (at 2:10 in the song), we use a rock-style beat, layered with a different breakbeat (**DJ Breaks 35.wav**). You can hear our drum track on the disc, in the **Stems** folder.

> Step by step Synthesising an off-beat bass stab



1 > There are many ways to make a hardcore bass stab, but here we'll demonstrate how you can use synthesis and sampling together to create a rock solid custom-made sound. We first load Strobe from FXpansion's DCAM: Synth Squad, although any synth can be used for this. Use a sawtooth oscillator, turn off the filter and increase the **Unison** setting to **6**.

2 > In the TransMod modulation area, set a slot's source to **PolyUnison2±** and its secondary mod source (below 'via') to **ConstB1**. Now drag the (yellow) outer ring of the **Fine** knob to detune the voices until the sound shimmers like a chorus but doesn't sound dissonant. Do the same to the pan slider's 'track' to spread the unison voices across the stereo spectrum.

3 > Program an off-beat bass pattern (an eighth-note between each beat) and note how the sound is inconsistent because the unison voices drift in and out of phase with each note. Put this MIDI clip to one side, and create another clip, with a note (C4) in every bar lasting almost the full duration of the bar - create 16 bars' worth of this.

Further listening and information

Sing It Louder by Hard N Soul feat. Donna Grassie & Lisa Abbott
bit.ly/86lgR

DJ Vibes' classic **Sing It Loud** gets an ultramodern remake courtesy of Hard N Soul (actually Vibes & Hattrixx, the latter being cm contributor and all-round dance production wiz Owen Palmer).

Things You Do (Gammer Remix) by Eclipse
bit.ly/1adZj6

Gammer's big production makes the most of this uplifting and effortlessly melodic tune.

mixes.djfez.com/djs/mrjakk
US DJ MrJakk serves up a great selection of tunes in these energy-packed, up-tempo mixes

www.crushonhardcore.com
The latest **Crush On Hardcore** compilation comprises five CDs' worth of stormin' UK/freeform hardcore, and what's more, it's a free download.

www.happyhardcore.com
Highlights include streaming radio, an active forum and a store - order a copy of **Hardcore Addiction 2** while you're there!

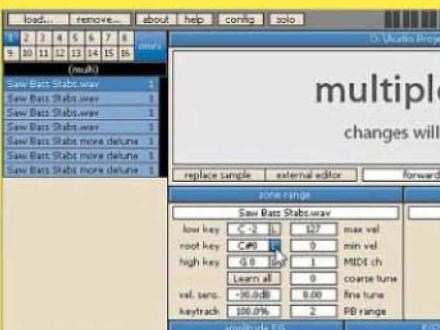
www.knifeforcerevolution.com
Take a trip back in time with the Knifeforce archive, with free MP3s and artwork of pretty much everything this classic hardcore ever label released, along with several related imprints.

> Step by step Resampling a synth sound



1 > Set the locators to surround the 16 bars of MIDI and choose **File > Export > Audio Mixdown...**. Select the bass track in the lefthand panel; put in a sensible **File Name** (ie, **Saw Bass Stabs**); set the **Bit Depth** to 32-bit float for the best quality; and tick the **Pool and Audio Track** options. Then click **Export** and **OK** when prompted to import the file.

2 > You'll have a new track that's got a clip with detuned saw bass noises in every bar. Enable snapping and cut the clip at every bar (hold **Alt** while using the **Scissors**), then **Solo** the track and delete all notes that don't have a punchy, solid attack. You can even go back into your synth, tweak it to make a variation on the sound, do another render, and so on.



3 > Now we need a sampler - we're using Vember Audio's superb freebie shortcircuit, which is on your cm DVD. Drag in all the clips of your best bass notes, **Shift**-select all the layers, and set the **low key** and **high key** to cover the whole keyboard. Put your off-beat bassline MIDI clip onto the shortcircuit track, play it in a loop, solo the track, and click the 'root key' **L** button to set the root.

4 > Click the red switches next to each layer to toggle stabs on and off until you find a combination that works. You can now apply insert effects to your solid, consistent bass noise. As well as EQ and a little saturation, we use Sonalksis' Stereo Tools' **Zero Width Below** function to 'monoise' the bass frequencies (and the mids, in this case), to ensure a consistent balance of kick-to-bass on all systems.

Synthetic to the core

Hardcore synths tend to be of the big and bold variety, with unison detune being ever-popular for creating huge-sounding patches. One thing to think about with your synths is their stereo width - a very wide sound will keep out of the way of the centre-panned instruments, aiding clarity, not to mention making your mix sound bigger. Such wide synths can be created using panning of the unison voices (possible in synths like FXpansion DCAM Synth Squad and NI Massive); using effects like chorus; or double-tracking, where you pan two instances of the same synth (with the same patch) left and right and feed them the same MIDI. This last method needs a synth that's free-running and/or has some sort of 'analogue' behaviour, so that there are differences between the two sides. By comparison, if you use this trick with a sampler, you'll end up with a sound that's louder but still panned dead centre, as the exact same sound

will come out of both speakers!

To get a fatter sound with some of our synths, we stack the same MIDI part twice (enabling Cubase's Lanes feature makes this easier to work with) and transpose one of the parts up an octave. We also use the inversions trick explained in the walkthrough below to keep certain synths from wandering too far away from a given note range.

While some synths are fairly restricted in their frequency/note range, others use automation to gradually modulate parameters, giving a sense of progression. For instance, some parts use a DnB-style bass sound made in FXpansion DCAM Synth Squad's Fusor shell, using two instances of Strobe. We use a unison detuned (and panned) 8-voice saw patch for the Reese mid-range, and bind the filter cutoff and resonance to Macro1 for automation during the song. Layered with this is another Strobe

pitched an octave down, supplying a straight-up mono sine wave sub bass (remember, it's best to keep bass frequencies in mono). 112dB Redline Reverb is inserted after this, using the built-in EQ to roll the bass off ('verbed bass can be muddy').

Many of our synth sounds come from reFX's excellent Nexus2 instrument (including that hardcore staple the piano), often with its effects turned off and our own plug-ins applied instead. We also use the trancetegate in parts (eg, at 1:21 and 2:10) to give a syncopated rhythmic pulse to what would be an otherwise plain lead line.

Speaking of which, rhythm is all-important in hardcore, and while the beats and basslines themselves are pretty rigid, funkiness and syncopation in your tunes will make them stand out - hardcore pianos are a prime example! Try alternating between on-beat and off-beat groups of notes, or divide a group of eight notes into a 3-3-2 pattern.

> Step by step Using inversions in chord sequences

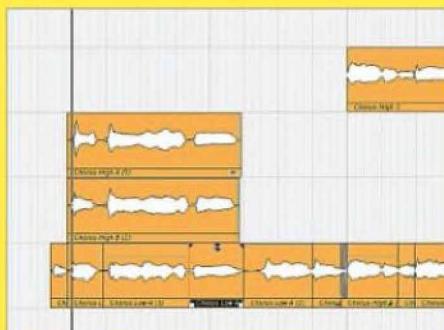


1 > Shown is the chord sequence from our chorus, using only first inversions - ie, basic triads. Sometimes, when the notes are spread out like this, it can be harder to mix, because some notes can clash with other instruments, or the sound will get too high and lose its 'body', or become so low that it gets mushy, etc.

2 > In sonically dense music like hardcore, this can be problematic, and a simple solution is to use inversions - ie, moving some notes up or down an octave (read bit.ly/mRnsL for more info). We select all notes above (and including) F5 and use the **MIDI>Transpose** option to shift them -12 semitones (you can also drag them).

3 > Now we have exactly the same chord sequence, but the resulting notes are all in a much closer range, which smooths the changes and makes the timbre more consistent. Toying with inversions like this can also reveal how notes within chords and, indeed, melodies and basslines might 'flow' from one chord to the next.

> Step by step Recording and mixing vocals

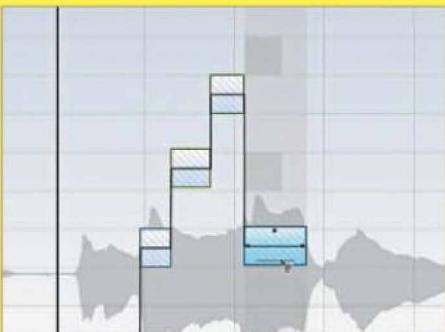


1 > For a suitably slick vocal, we call on veteran hardcore diva DMO (myspace.com/dmomusicproductions). Armed with our rough mix, lyrics and guide melody, she records her vocals with an sE Electronics Z5600 mark 2 Valve mic, sE Reflexion filter and RME Fireface, straight into Logic Pro 7.

2 > The vocal tracks are delivered in 24-bit AIFF format and pulled into Cubase. She's done multiple takes and harmonies, so we can stack them up (as in the intro), or comp together our favourite bits. We also cut out unwanted breathing noises, and raise the level of any phrases or words that are too quiet.

3 > On each individual vocal track, we apply a high-pass filter (about 100Hz) followed by compression. The vocal tracks are all routed to one Group Track, where we slam them into a PSP VintageWarmer2 in multiband mode (multiband compression can help you cheat your way to a decent vocal sound) and shaping EQ.

> Step by step Vocal editing and processing



1 > Modern hardcore is ultra-precise, so we'll use Cubase's VariAudio to make the vocal 'perfect'. For each part, double-click to open the Sample Editor, then click the **Pitch & Warp** arrow. Press **Ctrl+A** to select all notes, and increase the **Pitch Quantize** slider to centre their pitch. You can drag notes that have snapped to the wrong place, and even change the tune!

2 > For an Auto-Tune style effect, select a note and turn the **Straighten Pitch** slider right up. Using the **Segments** tool, you can cut (hover mouse near bottom of note) or glue (hold **Alt**) the audio. You can then use the **Pitch & Warp** tool to stretch and repitch segments to create totally new melodies, like the ear-catching synthetic vocal hook at 2:53.

3 > The chorus vocals are sent to a group bus feeding an auxiliary channel loaded with a reverb followed by a delay. Band-pass EQ focuses these echoes on the 800-5000Hz range, and a compressor is applied, with its sidechain fed by the chorus group bus – thus the delay ducks when the vocal is happening, and rises in volume to fill the gaps.

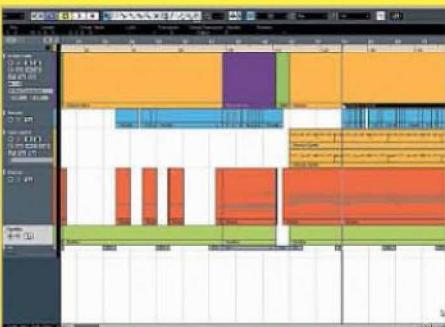
Hardcore mixdown

It's crucial that other instruments don't obscure the bass and kick, so we apply a high-pass filter (at least 100Hz) to all other sounds in the mix. It's also wise to keep bass frequencies mono, so the bottom end will sound equally coherent on headphones, a hi-fi, or a mono system (many clubs have mono subwoofers). If you pile stereo effects on your bass, it may even vanish on some systems! If you have trouble hearing the bottom end, try placing a low-pass filter at about 100Hz on the master bus.

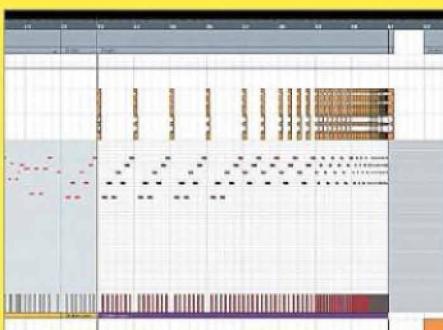
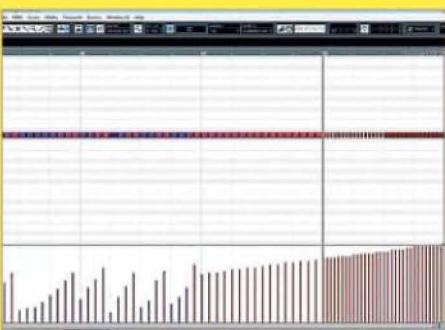
Aside from the vocal, there's not much need for compression in the mix because the sounds are already consistent in level, especially the samples. To help our kick cut through, though, we use Vengeance Multiband Sidechain on a number of our instruments, including the vocal. With the fastest attack time and the Strength knob at halfway, the instruments duck in volume very briefly on every beat, allowing the kick's attack to be heard.

For mastering, we use iZotope Ozone 4, with a treble-boosting EQ, a dash of Harmonic Exciter, Multiband Compressor (in mid-side mode with a gentle ratio of 1.2:1 but a deep threshold) and the Loudness Maximizer engaged in Intelligent II mode. The latter has a very fast release and really slams the track hard – this impairs quality, but it's the price you have to pay if you want your track as loud as commercial ones. Aggressive mastering really brings out the ambience, so go easy on the delay/reverb!

> Step by step Making the track flow



1 > The way you introduce musical ideas throughout your tune has a big effect on their impact. For instance, when the vocal chorus kicks in at 1:24, the listener has already heard the vocal hook in the intro, and they've just had 16 bars of drums and the chorus synth... But they haven't yet heard *both* at once, so when the chorus does hit, it's an "aha!" moment.



3 > Transitions and fills tell your listener that a change is coming, and hardcore makes great use of them. We have a dedicated track for a rushing snare roll (shown) that ushers in many of the changes in the song. Reverse cymbals and whooshing effects are also useful here, the former easily created by reversing your crash cymbal (timestretch it if you need it longer).

4 > In the big build-up at 0:59, we use the tried-and-tested dance music trick of taking a snippet of the tune and repeating it... then taking a snippet of *that* and repeating it... and so on, until the repeated section gets so short that the mix goes into a buzzing meltdown. Then we give the listener a moment's respite with a 'boom' effect and some floaty sweeping sounds before dropping the chorus!

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